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TAPPI IMPRESSED BY PACIFIC COAST OPPORTUNITIES

Delegates From All Sections Pleased With Progress and Opportunity of Western Pulp and Paper Industry

Amazement at, and delight with, the pulp and paper resources of the Pacific Coast, were the outstanding features of the nineteenth annual international fall convention of the Technical Association of the Pulp and Paper Industry, held in Portland, Oregon, September 10 to 13, inclusive. No less emphatic were the expressions of pleasure over western hospitality, which included not only the formal entertainment, but the reception into plants, offices and homes of the delegates by western pulp and paper mill executives.

Big Registration

Total registration exceeded 400, and over a hundred more attended part of the convention. The delegates came from all sections of the United States and Canada, from Australia and from Japan. The keenest of interest was displayed in the pulp and paper industry of the Pacific Coast. Its resources in power, in wood, in shipping facilities by rail and by water, in water supplies, its multiplicity of plant sites were gone over again and again. Nor were the existing pulp and paper mills forgotten. The men, the methods and the equipment employed to bring these plants to a high efficiency were discussed in the official meetings and given even more careful scrutiny and study in the visits of individuals and groups, who spent some days visiting plants after the conclusion of the formal sessions.

Inspect Mills

TAPPI and its proceedings have always aroused keen and sustained interest. Added to this interest in the formal papers was the desire to see and inspect the western pulp and paper industry. As one delegate said: "We want to see how and why the Pacific Coast has been able to increase, in Oregon and Washington, its production of sulphite pulp from 18.4% of the total United States production in 1928 to 42.5% of the total in 1933.

Pure water at low temperature even in summer, it was pointed out, is available in almost any desired quantity. This water, not only available for pulp and paper production, is also capable of developing one-third of the hydro-electric horse power of the United States, most of this power being available to both rail and deep water transportation. This phase of that situation was gone into both in the formal proceedings and the more informal gatherings which discussed matters of particular interest to individuals and firms. The Pacific Coast pulp and paper mill, in the main, does not depend upon coal for power, which more than one delegate pointed out represents from 12 to 20 per cent of the cost of paper making in the East. Part of the power on the Pacific Coast comes from hydro-electric projects, some from wood burning power plants and some from plants burning oil. It came out in the discussions that the power of the Pacific Coast pulp and paper mill is substantially lower per ton of pulp or paper than is that of the eastern plant.

Study Raw Material

Delegates had heard of the great volume of the raw material. They were given facts respecting the total stand of pulp woods and shown how the timber grows. At present the existing mills on the Pacific Coast are obtaining about 35 per cent of their wood in the form of cord wood, about 15 per cent in the form of chips from sawmill refuse and about 50 per cent in log form.

In Western Oregon and Western Washington alone, not counting Douglas fir, the stand of pulp woods, from 6 inches in diameter

up, is estimated at 400,000,000,000 cords. Rate of growth in this area, on lands which have been logged, of pulp woods probably exceeds the present annual consumption of existing mills, though government figures are not yet available, though they will be shortly. The availability of these supplies to existing sources of power and the large power plants, such as the Bonneville Dam, being built by the federal government, were stressed. In addition to the pulp woods in Western Oregon and Western Washington there is, of course, a vast volume in the eastern parts of the two states, in Idaho, in California, in Montana, in British Columbia and in Alaska.

The ease with which shipments of pulp and paper may be made either by rail and water is likewise reflected in the ease with which supplies, such as sulphur, may be brought to the Pacific Coast with economy and dispatch.

In the interest of the orderly and complete development of natural resources, much data and factual information is being assembled by the Northwest Regional Planning Conference and by various branches of the federal government. The federal government, for example, is conducting a physical inventory of timber resources which will show the species, the size on each section and the ownership. For Western Oregon much of this work has been completed and the detailed information is available to any firm or individual interested. The work for other parts of the region is under way.

TAPPI delegates displayed much interest in the various pulps made in Pacific Coast plants, the methods of production and the proper use of these pulps in eastern plants. While of course each month sees a better understanding of the methods which should be used in making paper from Pacific Coast pulps there are many plants which have not had extensive experience in their conversion. These plants make no secret, in many cases, of their interest in the western product and of their desire to study production methods and consider changes in methods which should be made in the East to get the best result.

INSPECT OLYMPIC PENINSULA

Following the TAPPI convention in Portland a group of Eastern visitors made a two day trip around the Olympic Peninsula to inspect the pulp wood timber and water power resources of that great virgin area. They were particularly impressed with the rapid re-growth of pulp wood species in the so-called "fog belt" of the Olympics which is tributary to Grays Harbor.

Several mills were visited beginning with the mill of the National Paper Products Company at Port Townsend, the Olympic Forest Products Company, the Fibreboard Products Company and the Washington Pulp & Paper Corporation all in Port Angeles.

From Port Angeles the party drove westward past Lake Crescent and on to the Pacific and thence southward to Lake Quinalt. Grays Harbor was visited before returning to Seattle.

On the inspection trip were Mr. & Mrs. Harold H Murdock, Mr. & Mrs. Carl F. Richter, B. D. Millidge, W. S. Kidd, Miss Helen Kiely, Dr. C. E. Curran, H. B. O'Heir and A. S. Quinn. Mr. Quinn is Pacific Coast manager for the Stebbins Engineering and Mfg. Company and lives in Seattle.

The President's Dinner in Honor of National President Clark C. Heritage and Pacific Section President Lawrence Killam Monday Evening, September 10th

TAPPI MEETS ON PACIFIC COAST

A Running Story of the International Convention in Portland, Oregon, Sept. 10 to 13th

The initial meeting was called together on Monday morning by Lawrence Killam, who, as chairman of the Pacific Section extended a warm official welcome; then giving place to C. C. Heritage, president of TAPPI and Manager of the coating division of the Oxford Paper Co., Rumford, Maine. Mr. Heritage in assuming the chair, stressed the value of the inter-change of ideas and got right down to business with a rush pointing out the need for new ideas, new friends, new vision and study of new phases of the industry, all objectives forwarded by the meetings of TAPPI.

The paper on "History and Biography of the Industry" by Ralph M. Snell, Hurlbut Paper Co., and Lee, Mass., and B. T. McBain, Portland, Ore., was read by title, and the convention stood in token of sorrow at the unexpected death of Mr. Snell.

"The Pulping of Douglas Fir by Ammonia Base Acid", was read by Dr. H. K. Benson, dean, department of Chemistry, University of Washington, Seattle, there being embraced in the paper work of R. P. Erwin, J. R. Hendrickson and J. A. Tershin of the university. These were tests conducted upon a laboratory scale, rather than a commercial basis and serve to point the way toward the utilization of Douglas fir as a pulp wood, when and if that becomes necessary.

The pulp wood resources of Western Oregon and Western Washington were then discussed in detail by Thornton T. Munger, whose paper appears on pages 20 to 23 of this issue.

One of the most detailed and carefully prepared papers was "A Study of the Coloring Matter in Pine Kraft Pulps", by Walter Holzer, chemist, Crown-Willamette Paper Co., Camas, Wash. The study points out that the coloring matter in jack pine kraft pulps is due primarily to a sulphur dye which has a phlobotannin as its organic constituent. The presence of sulphur darkens the color of the kraft over that of a comparable soda pulp and makes kraft harder to bleach in proportion to its organic sulphur content.

In discussing "Nature and Means of Improvement of the Color in Western Hemlock Groundwood", Dr. C. E. Curran, in charge of the Paper Section, Forest Products Laboratory, Madison, Wis., urged the removal of the ray cell rather than attempts to lighten the color. He also pointed out that from a chemical standpoint oxidizing agents such as sodium hypochlorite and alkaline peroxide seem satisfactory, but need further study before either may be considered commercially feasible. It is desirable to determine the chemical composition of the coloring principal in the ray cell and such a study might well develop a method for the removal of the material from pulp.

The design of heat transfer equipment is still based largely on empirical rules, slowly developed through experience, pointed out Charles S. Keevil, professor of chemical engineering, Oregon State College, Corvallis, Ore., in delivering a paper on "Heat Transmission". Laboratory work in recent years has developed much valuable information, especially on heat transmission between solids and liquids, but much work has to be done to fit these tests to commercial applications.

Application of scientific methods to the processing and testing of paper, the training of laboratory personnel and the realization of greater industrial efficiency through application of research are the functions of the technical control department, outlined in the paper "Technical Control in Pulp and Paper Manufacture" by M. W. Phelps, assistant manager, Pacific Mills, Ltd., Ocean Falls, B. C., and read by J. G. Long of the Crown-Willamette Paper Company's Camas mill. Research may be classified into two natural divisions; fundamental and industrial research. Mr. Phelps pointed out that much of the fundamental research can be delegated to various public research organizations, thus leaving to the technical control department the translation of many of the theoretical findings into practical application, as well as work on the applied research problems which bring a faster and more certain realization. A plan for the systematic initiation, development and use of a research project was submitted and an outline of the necessary control or follow up of the project to bring the desired result. Research is intimately connected with progress in both industrial efficiency and earning power of a corporation.

Monday Luncheon

At the noon luncheon on Monday C. W. Morden acted as toastmaster.

Mr. Morden, a past president of the Pacific Section of TAPPI, spoke of the development of the pulp and paper industry on the Pacific Coast, referred to the industry being in its "virile young manhood", and expressed the belief that there was no reason why the Coast industry should not grow because this western country possesses the necessary resources.

Clark C. Heritage, national president of TAPPI, was introduced by Mr. Morden, greeted the convention and welcomed the ladies who were present. He said that the visitors recognized the great part the industry on the West Coast was now playing in the national industry and that its future was to be even greater. He assured the gathering that those who came from the East would take full advantage of their opportunity to learn all about the Pacific Coast. Heritage read telegrams of greeting from Allen Abrams and Maximillan Krimmell, former presidents of TA PPI.

W. D. B. Dodson, executive vice-pressident of the Portland Chamber of Commerce, the speaker of the day, was introduced by Mr. Morden. Mr. Dodson spoke of the Bonneville power development by the federal government and explained what opportunities it offered the pulp industry through cheap power. He stated that it was hoped the power rate would be as low as 1 mill or 1¼ mills per kilowatt hour, the rate depending upon the method adopted by the government in writing off the construction cost of Bonneville.

Monday Afternoon Session

Myron Black, of the Inland Empire Paper Co., Spokane, Wash., presided at the Monday afternoon

Above standing in front of the Oliver filters in the Camas mill of the Crown-Willamette Paper Company, left to right, A. S. Gerry, R. T. Petrie, John J. McDonald, J. W. Cronin, Norman Kelly, Miss Helen Kiely, Raymond Hatch, John Traquair and E. C. Hendrickson.

Above — Charles R. Seaborne, general superintendent Thilmany Pulp & Paper Company, looking over the No. 11 paper machine in the Camas mill.

At the right standing in front of the bleach tanks reading left to right, Harry Glen of Crown-Willamette, F. W. Wickham, Arthur A. Coffin, Harold Fretz, Bruce Cruickshank, M. M. Whitman and George W. Bowers.

At the left a TAPPI group standing alongside the No. 11 machine in the Camas mill of the Crown-Willamette Paper Company. At the extreme right stands V. L. Tipka of the Technical Control department of Crown-Willamette.

session, which was opened by a testimonial from W. H. Goodenough, an old time paper mill superintendent, who gave his views on the benefits derived through technical research and control as contrasted to the old rule of thumb methods.

A subject in which more than usual interest was evinced was "The Casting Problems of Stainless Steel", a paper by Ernest G. Swigert, vice president Electric Steel Foundry Company, Portland and printed elsewhere in this issue, commencing on page 24.

The Pacific Coast has one-third of the potential water power of the United States, which has 40,000,000 h.p., of which 12,000,000 is developed, said C. C. Hockley, Oregon Public Works Administrator, Portland, and well known paper mill engineer and operator, in speaking on "Power Possibilities in the Northwest". Washington has 7,145,000 h.p., of which 1,000,000 h.p. is developed; Oregon has 3,700,000 h.p., of which 370,000 h.p. is developed; California has 4,600,000 h.p., of which 2,447,000 is developed. Mr. Hockley also gave data on the Grand Coulee Dam, which can develop 775,000 firm h.p., and the Bonneville Dam, developing 320,000 firm h.p., both tremendous federal projects now under construction and being only two of the eleven natural power sites on the Columbia from the Pacific Ocean to Canada. The dams being built will apparently develop power at from 1.4 mills to 2 mills at the dam or from 2 mill to 2.4 mill per k.w.s. at Portland or Seattle. The Pacific Coast offers to the pulp and paper industry everything it needs from a favorable climate to power and raw materials.

Application of the film theory to the sulphite tower for the determination of the overall resistance to absorption and a method for indicating the effect of tower operating characteristics, featured the paper "Theory of Absorption Applied to the Sulphite Tower" prepared by W. L. Beuschlein and Frank H. Conrad, of the department of chemical engineering of the University of Washington.

Methods of handling hog fuel, its storage and economical use were treated in "Design and Operation of Hog Fuel Burning and Handling Equipment", delivered by H. S. Bastian, of the Combustion Engineering Co., Portland. This form of fuel, though widely used at Pa-Pacific Coast pulp and paper mills, is not extensively used elsewhere and in the discussion which followed presentation of the formal paper a number of questions were asked as to its fuel value and general supply. Mr. Bastian pointed out that the rapid strides in the economical use of hog fuel and its advancement to a scientifically controlled and technically superior plane of usefulness have resulted from keeping pace with other branches of steam engineering and engineering hog fuel equipment on a basis of its own fuel characteristics.

The method developed to transport high pressure steam in large quantities over a long distance was described in "The 14-inch Steam Line Between the Washington Gas & Electric Company and the Longview Fibre Company", by Ralph T. Smalley, Vice president, Washington Gas & Electric Co., Longview. This line, 5,700 feet long, now has more than 1½ years of successful operation behind it. In 19 months 770,000 tons of water, as superheated steam, have been carried through the line at an average velocity of well over a mile a minute.

THE PRESIDENT'S DINNER

Franklin T. Griffith, President of the Portland Electric Company and a director of Crown-Willamette Paper Company was toastmaster of the President's Dinner, Monday evening, September 10th. He introduced each speaker with spontaneous humor and kept the packed ballroom chuckling over his remarks.

Mayor Joseph K. Carson welcomed TAPPI to Portland and said he had no doubt but what many of them would return to live on the Pacific Coast. Dr. H. K. Benson, who started the movement in 1928 which resulted in the formation of the Pacific Section of TAPPI spoke of the growth of interest in TAPPI's work on the West Coast, and expressed his satisfaction over the success of the Pacific Section.

Ex-mayor George L. Baker of Portland and now head of the Oregon Manufacturers Association talked of industry in the Northwest and the opportunities for further development.

Marshall N. Dana, City Editor of the Oregon Journal, spoke of the Pacific Northwest Regional Planning Commission, of which he is chairman, the Oregon Planning Commission and the Washington Planning Council, explaining to TAPPI that these bodies were gathering facts on the natural resources of Northwest states with a view toward organizing further development along sound lines and with knowledge of what should be done. He added that the planning work aimed to coordinate many industries and bring them together in cooperative effort for mutual benefit, with particular reference to the common problems of the pulp, lumber and fishing industries. Mr. Dana emphasized the opportunity afforded the paper industry by the development of electrical power at the Bonneville Dam, the first unit being ready for operation next March.

Clark C. Heritage, National TA PPI president presented the Pacific Section a large banner which was hanging on the wall behind the speaker's table. White letters on a blue background formed PACIFIC SECTION of TAPPI. Lawrence Killam as President of the Pacific Section accepted the banner with the thanks of the Western section.

WEDNESDAY MORNING MEETING

The Wednesday morning session opened with Ray Hatch, director of research, pulp division, Weyerhaeuser Timber Co., Longview, presiding. A paper, "Consistency Regulation", by Frederick Wierk, of Johnson & Wierk, Inc., New York, reviewed the principles relating to paper stock consistency regulation.

Established at the plant of the Kimberly-Clark Corporation, Neenah, Wis., and in commercical operation since June of 1933, the spray burning of sulphur was discussed in the paper "The Texas Gulf Sulphur Company, Spray Type Sulphur Burner" prepared by Dr. Otto Kress, W. H. Swanson, E. C. Porter and B. F. Smith. Simple and economical in operation, this burner produces 19 to 21 per cent gas, compared to 12 to 14 per cent gas obtainable under the old method.

In the period 1928 to 1932 pulpwood requirments for the United States totaled 5,000,000,000 board feet annually, said Minot Davis, manager logging and timber department, Weyerhaeuser Timber Co., Tacoma, Wash., in speaking on "Pulpwood Supply of the Pacific Northwest". Of the aforementioned total about 1,500,000,000 feet was imported, about 1,000,000,000 feet was produced upon the Pacific Coast and 2,500,000,000 feet produced elsewhere in the United States. Mr. Davis then spoke of the 170,000,000,000 feet of mature pulp wood in Western Washington and Western Oregon and the 140,000,000,000 feet in Alaska, totals which would supply all the pulp wood required in the United States for 62 years,

not taking into consideration growth on logged off lands.

The Pacific Coast could supply all the pulp wood imported, as well as its present normal production, and the mature stands would last for 125 years. There is no shortage of pulp wood, nor need anyone be afraid of constructing additional pulp mills. Mr. Davis particularly emphasized the advantages of pulp woods in a sustained yield forest program, such as is being instituted in the United States, because of the relatively short length of the pulp wood rotation as compared to the much longer life required to produce sawmill logs. Mr. Davis estimated the average hemlock yield at 20,000 feet per acre at 60 years and 40,000 feet at 80 years.

For an 80 year cutting cycle, which many consider ideal who have become accustomed to using the large logs employed at western pulp mills, one-half of the National Forest increase in Alaska alone would furnish a perpetual supply of pulp wood for the entire United States at the present rate of consumption. On a 60 year cutting cycle only three-quarters of Alaska timberlands will be required. The Alaska example was employed to stress the point because there is no known substantial use for the timber except in the production of pulp, nor is there the faintest idea of any use for the land except for the growing of timber.

It is not necessary to import a single pound of pulp, or a single pound of paper, or a single foot of pulp wood, to put the United States upon a self sustained pulp and paper production basis, Mr. Davis stated. In fact, Oregon, Washington and Alaska can supply all the pulp wood required for the United States, not only upon the basis of present consumption, but upon the basis of normal expansion in demand. Reforestation assures a permanent supply upon lands suited only for timber growing.

A progress report on "Pulp Specifications" was submitted by a committee headed by Helen U. Kiely, technical director of the American Writing Paper Co., Holyoke, Mass. The project seeks to substitute definite specifications for vague terms. However there is not enough known of the basic properties of pulps to permit perfectly correct specifications. The study was initiated by sending 4 pulps to 22 laboratories for classification. This resulted in the development of the percentage system by which most mills may classify pulps fairly well.

This last year two very difficult pulps were sent to 18 laboratories, number 1 being a regular Solka Alpha and the other a Dexter Mitscherlich pulp. It was evident from results that one can not calculate percentage ratios having only two pulps.

It is desirable for all laboratories to study their testing methods by comparing their tests with those of other laboratories. The tests indicate that details of the testing method, such as basic weight of sheets or the pressure used, are less important than a proper understanding of which points on the beating curve should be tested and how to get tests which check with the actual behavior under mill conditions. As the next step in pulp specifications it was recommended that 3 standard pulps, covering the range from very weak pulps, like a hardwood sulphite, to strong hard pulps, be secured and sent to interested mills for practical trials.

Treated from the standpoint of economy and safety with respect to power generation and distribution a paper on the "Economic and Safety Features of Cubicle Type Motor Control Units" was presented by K. L. Howe, engineer, Westinghouse Electric & Manunfacturing Co., Seattle, Wash., and E. H. Vicary, engineer representing Crown - Zellerbach Corporation, Olympic Forest Products, Rainier Pulp & Paper Co. and the Grays Harbor Pulp & Paper Co. Economics of manufacture and installation, it was pointed out, which have been proven for this type of construction, can be realized more fully by extending the idea of group assembly of self contained units to include motor control distribution center and starting units. The safety features assume major importance because of the greater number of men whose regular duties cause them to come in contact with the operation of the equipment. Any type of control is easily assembled in cubicle form. Cubicle control is divided into two classes; the first involving all equipment and circuits 600 volts and below; the second applicable universally to 2300 volt circuits, with many 4000 volt circuits covered by the same analysis.

The plant of the Olympic Forest Products Company, Port Angeles, Wash., a sawmill and a pulp mill, called for 2200 volt and 440 volt cubicles, each of the 220 volt cubicles groups varying from 8 to 12 units, the 440 groups varying from 10 to 30 units. These were delivered completely assembled and wired ready for location on a foundation, making necessary only feeder connections directly to the bus bars, connect the various motor circuits to their respective circuit breakers within the cubicle structure and installing push button controls for remote operation. In cubicle design mill operations and electrical maintenance men are given the benefit of maximum protection from a safety standpoint.

Various methods of applying sprayed metals to any surface was dealt with in the paper "Metalayer Operation as Applied to Pulp and Paper Industry", by E. V. David, of the Air Reduction Sales Co., Portland. The paper dealt with the method of melting, atomizing and spraying metal and gave a suggested outline of uses in the pulp and paper industry.

WEDNESDAY LUNCHEON

The joint luncheon with the ladies on Wednesday was made a most interesting and entertaining affair by Ray Smythe's presentation of "A Business Forecast for the Future Based on a Study of Planetary Influences". In addition to a number of slides showing the inter-relationship between the positions of the planets in the heavens and business cycles, Mr. Smythe had Paul Bunyan's blue ox Babe on hand to assist him, and many weren't so sure but that Babe was a real live animal.

Nearly everyone showed intense interest in the talk for it opened a field of speculation as to the cause of business booms and depressions not heretofore touched upon. After the luncheon a number of delegates inquired for more information and learned that Mr. Smythe's talk was extracted from his forthcoming book entitled, "Stars Ahead", which will be published in about a month.

THE CAMAS MILL VISIT

After luncheon Wednesday the men went across the Columbia for an inspection trip through the Camas, Washington mill of the Crown-Willamette Paper Company, known as the largest specialty paper mill in the world. The visitors were shown the entire mill in groups in charge of competent guides, and were aided by a map of the plant printed especially for the TAPPI visit by the mill management. All twelve paper machines were inspected together with sulphite ,groundwood and sulphate pulp mills. The bag plant and converting plant were

a source of wonder for the former has a daily capacity of ten million bags and the latter can turn out three thousand cases per day of towels and toilet tissue. Interest in the mill, which was spotlessly clean in every department, was so great that it was with great difficulty the crowd was rounded up for the trip back to Portland after six o'clock. W. R. Barber of the technical control department and newly elected first vice-chairman of the Pacific Coast Section was heard to remark that he expected to stumble over T APPI delegates around the mill for the next week for a number had become lost in the maze of buildings and equipment.

The visit was arranged through the courtesy of the Crown-Willamette Paper Company and was in charge of A. G. (Buff) Natwick, assistant mill manager. Jack Hanny, mill manager was on hand making the guests feel welcome.

THURSDAY MORNING SESSION

G. N. Collins, of the International Paper Co., New York, and vice-president of TAPPI presided.

The first feature of the program was an able and well balanced paper on "Modern Electrical Equipment in the Pulp and Paper Industry", by R. V. Maier, of the General Electric Company, Portland. There was first traced something of the inception of the application of electrical energy to pulp and paper mills and a careful review of the progress and benefits derived from its use on the various units in a modern mill and for modernizing some of the older units. Mr. Maier clearly pointed out that the many advantages of electrical apparatus in the pulp and paper industry have been thoroughly demonstrated over a period of many years. The equipment is flexible, economical and reliable. Maintenance expense is low.

Studies that have been made of the adsorption of acid and basic dyes upon alumina, cellulose and paper fillers, was discussed in "The Effect of PH Upon the Adsorption of Dyes by Cellulose and Fillers" by Professor Leo Friedman and Delman Vernon Kuykendall, Jr., of the department of chemistry, Oregon State College, Corvallis. These studies have demonstrated the important part played by the freshly precipitated alumina and the necessity for careful control of pH. Studies of the adsorption of methylene blue upon cellulose, kaolin and talc have shown that the process is true adsorption since it follows the Freundlich adsorption law. Control of pH is necessary to bring about a good floc of alumina; furthermore the pH determines the degree of adsorption of the dye upon the alumina and other materials present. The study will be continued to determine the effect of the size on dye adsorption.

Continued on page 13

LADIES ENJOY TAPPI CONVENTION

As Reported by a TAPPI Wife

The women have proclaimed the TAPPI convention a great success. From the moment the train left Chicago the 100 odd members from all parts of Eastern United States and Canada were welded together by bonds of friendliness and congeniality. Helen Kiely's spirit of wholehearted enjoyment of and participation in everything the trip and the convention had to offer, set the tempo for the Easterners and was equalled only by the hospitality and enthusiasm of Mrs. A. G. Natwick, who led the Western women in their welcome.

Monday morning gave the busy women an opporunity for sleep, or shopping or a hurried trip to the beauty parlor before joining the men at luncheon. During the afternoon a well conducted sight-seeing tour of Portland and vicinity showed the visitors the city's fine residential sections and scenic surrounding country. The President's Dinner in the evening, in honor of Clark C. Heritage, President of TAPPI, was so well attended it filled to overflowing the large ballroom of the Multnomah. It was a delightful occasion which the women enjoyed thoroughly.

MRS. A. G. NATWICK
Chairman Ladies Committee

Tuesday morning called for early rising in order to catch the busses for a trip up the Columbia River and around Mount Hood. Over sixty women were ready and eager for the day's trip. As the scenic beauty of the drive is unsurpassed, the trip was enjoyed as much by Western women, well acquainted with its beauties, as by the Easterners, to whom each bend in the road brought new views of the lovely Columbia Valley. The only man to brave the company of so many women for a whole day proved a great addition to our company. Mr. James G. Ramsey led us in song and thereupon became a favorite with the ladies and remained so for the rest of the convention.

Beautiful waterfalls and distant mountain peaks and lovely valleys were not the only attractions of the day. The intricacies of a large salmon hatchery were explained and the visitors enjoyed feeding bread to the hungry fish. A delicious luncheon was served at the Columbia Gorge Hotel. The sun had struggled through the clouds at last and was then shining brightly, so it was with good spirits that the busses were again filled and the trip resumed.

The fun really began when the leading bus suffered a breakdown. It refused to go and had to be pushed by the second bus. When a hill was reached and the first bus could proceed independently a sigh of relief would float through the rear bus to be followed all too shortly by a burst of laughter when the first bus would be sighted patiently waiting around a curve for another push. Who led the laughter? Mrs. Natwick, of course! It was her jolly personality which turned the breakdown into the success of the trip. Everyone grew friendly and intimate, happy and relaxed.

Sandwiches and hot chocolate at a rustic mountain inn furnished the last touch. Friendships begun in the morning were launched for many years. The drive home through the tall trees in the black night was peaceful and relaxing. And to crown the day's enjoyment, the husbands were anxiously waiting. Actually worried, they bestowed such tender considerations on their wives that bus breakdowns will be included in the programs of all future TAPPI conventions.

Wednesday morning began for most of the women when they enjoyed a luncheon with the men. Ray Smythe's talk on the stars and their influence on business cycles aroused much interest and curiosity.

The afternoon was devoted to a trip to the famous country estate of Governor and Mrs. Julius L. Meier. Their grounds are beautifully situ-

TAPPI Ladies at Governor Meier's Columbia River Home

ated overlooking the Columbia River Valley. The interest of women from all over the country was inspired by the lovely flowers and rare plants which bloom so luxuriantly in that rare setting. Governor Meier greeted his guests and expressed the wish they would come often to the Pacific Northwest.

And so came the last day. Golf, luncheon and bridge at the Oswego Country Club. The endurance of TAPPI wives is truly remarkable. Numerous beautiful prizes were awarded the winners of the golf and bridge tournaments.

Again the wives proclaim the TAPPI convention in Portland a great success. May all the wives attend the next one.

TAPPI GETS UNUSUAL PUBLICITY

The success of Ray Smythe's publicity campaign for the TAPPI convention is shown not only by the large attedance at the meeting, but also by the fact that over a hundred newspapers from Portland to Newfoundland ran stories about the convention beforehand, many devoting full columns to the coming gathering of TAPPI. During the convention Portland papers published over 30 columns of news in addition to many photographs. It is believed this is more publicity than any other convention in Portland has ever received with the possible exception of the American Legion gathering.

Trade papers also cooperated with more pre-convention news than ever before. Can there be anyone left in the pulp and paper industry who has not heard of the famous TAPPI convention in Portland.

OTHER PRIZE WINNERS

At the Farewell Dinner Thursday evening G. S. Brazeau was presented with the chromium plated cocktail set offered by the Chomium Corporation of America. Mrs. Harold Hauff won the vacuum cleaner offered by the Sturdevant Company, and Dorothy Vietheer won the bottle of champagne given by the Multnomah Hotel. G. W. Galloway guessed accurately the weight of the chunk of clay in the Edgar Brothers exhibit which weighed 542 pounds, and won the prize of pottery made from Edgar Brothers clay by Gladding, McBean & Company.

Thursday Morning Session—Contd.

Continued from page 11

Zinc sulphide pigments as fillers were described as advantageously adapted to use in paper and boards made with less expensive fibres in the paper "Increasing the Usefulness of Less Expensive Paper Fibres With Zinc Sulphide Pigments", prepared by F. A. Steele, chief of the paper section, research division, The New Jersey Zinc Company, Palmerton, Pa., and read by H. E. Brown of that company. The paper was based upon experiments confined almost entirely to unbleached sulphite pulps of the various grades.

The important part that the technical man plays in maintenance was described in the paper "Maintenance and the Technical Man," by William Gibson, chief engineer, Rainier Pulp & Paper Co., Shelton.

FAREWELL DINNER

Thursday evening after the golf and bridge tournaments everyone enjoyed the farewell dinner. The dry humor of Ralph Shaffer, president of the Shaffer Pulp Company, who acted as toastmaster, kept the crowd in a jovial mood. Mr. Shaffer had a difficult job locating all those who won the numerous golf and bridge prizes but he finally found them all and then turned to the moving pictures of the woods trip on Tuesday, which were taken by Roger Egan. The impression made by the movies of the visit to the big timber on Weyerhaeuser's timber lands is evidenced by orders placed by more than a dozen delegates for copies of the film to take home with them as a permanent record of their Pacific Coast trip.

The afternoon's golf tournament created merriment when shown on the movie screen and run backwards. After seeing themselves playing several are still wondering how they won prizes.

National TAPPI president Clark Heritage was presented with a ten-gallon hat as a memento of his West Coast trip. Recalling Harold Murdock's experience in Livingston, Montana, where he had to return the hat given him by the sheriff as the key to the city, because the sheriff said it was the only key they had, Heritage wanted to know if his hat was his to keep. Assured it was he accepted the gift with profuse thanks.

Dancing lasted until the small hours of the morning and conversation turned to the great success of the TAPPI convention in Portland. The thought was unanimous that every TAPPI gathering should be held in Portland where western hospitality makes warm friends of all who come.

LADIES GOLF PRIZE WINNERS

Mrs. Fred C. Shaneman won a leather golf bag with the low gross score. Second low gross was turned in by Mrs. Erik Ekholm who won a sports bag. Mrs. W. A. Kelly with third low gross won a serving tray. Mrs. E. P. Gleason won a raincoat. Mrs. Carl Fahlstrom made the longest drive from the 17th hole on the Oswego course, winning $10 in gas certificates. Mrs. J. G. Ramsey turned in the highest score and won a clock. Mrs. E. C. Lathrop and Mrs. Jack Hanny were nearest to their handicaps, each having a score of 100. The prize for each was a box of golf balls.

MEN'S GOLF PRIZE WINNERS

First low gross score was turned in by Dan Roberts and his prize was a golf bag. The first low net score was made by Carl Gaiser and his prize was a set of golf clubs. Gene Clark had second low net and won a cocktail shaker and tray. Third low net was made by Bruce Cruickshank whose prize was a raincoat. John Hassler won a fishing rod. E. P. Gleason won a set of three irons. For the longest drive on the sixteenth hole, W. R. (Bill) Weill won a sports bag. C. L. Batchelder won a golf bag, and William M. McNair won a cocktail set.

For the highest score Tony Siebers won a lantern. Jim Ramsey drove so many balls into the lake that he won a fishing reel. T. J. Long won a box of razor blades. The first to play to his handicap was Norman Lewthwaite who won a golf sweater. The following each received a box of golf balls: Reeves, Roberts, Gleason, Ramsey Hemphill, Henry, Hassler, Lathrop, Weldon, Champion, Wilcox.

LADIES BRIDGE PRIZES

Mrs. H. H. Richmond won the first prize, a pair of books ends. Mrs. Earl Thompson took second prize, an electric toastmaster. Third prize was won by Mrs. O. L. La Roux, and this was an electric sandwich maker. Mrs. R. L. Weldon having the smallest score won a pottery bowl. Next to her was Mrs. William Bain who won a 32-piece glassware set. Mrs. John Hassler, with the low total in auction won a large roasting pot. Mrs. J. J. McDonald who was second high in the auction contest won a steam fryer.

The menu and program at every seat Monday night for the President's Dinner was printed on pulp produced by the Soundview Pulp Company of Everett, Washington, and contributed by them.

TAPPI VISITS WOODS

Inspection of Timber and Logging Operations Sponsored by Weyerhaeuser and Crown-Willamette Delights Delegates

TUESDAY will remain long a red letter day in the memory of the members of TAPPI who visited the timber holdings and logging operation of the Weyerhaeuser Timber Co., Longview, Wash. While the Weyerhaeuser Timber Company served as host, the trip details were arranged and explained jointly by the logging departments of the Crown-Willamette Paper Company and the Weyerhaeuser Timber Co., both firms drawing their pulp timber from much the same type of forest and using much the same method and equipment in logging.

Members of TAPPI were especially impressed with the timber, the size of the logs and the density of the stand. On the Longview holdings of the Weyerhaeuser Timber Company the pulp woods — white firs, noble fir and western hemlock —make up about 20 per cent of the total stand. The balance is mainly Douglas fir. At some points hemlock or white fir will predominate for certain areas, but the average for the entire stand is as stated, about 20 per cent pulp woods and 80 per cent Douglas fir. The pulp woods in this stand are less than the average of the region; in Western Washington and Western Oregon, commonly called the Douglas fir region, in virgin forests about 33 per cent are pulp woods, the balance Douglas fir. One eastern man was asking about this and after giving the information a western pulp mill superintendent said: "But it is all pulp wood. When we need wood we find out how to make pulp out of it. In many of our runs now we use 100 per cent Douglas fir."

Busses to Longview at 6:30; aboard a special train at 8 o'clock and away the delegates went to the woods, many clad in white coveralls, others in blue, others in all sorts of stripes—and before the day was over the delegates found out why lumberjacks don't wear such garments. Ed Baker, logging superintendent, and Robert Conklin, woods engineer, of Weyerhaeuser Timber Company, shared with Ed Stamm, general logging superintendent, R. C. (Red) Spiering, superintendent Cathlamet operation, and Tom Jackson, superintendent Clatsop operation, of the Crown-Willamette Paper Company the job of explaining the method of logging and the points of interest. Ed Baker and Ed Stamm vied with each other all day at the megaphone.

Up the Ostrander gorge went the Paul Bunyan special through an area logged 25 years ago and now, in the main, covered with young timber "as large as we are using and much heavier on the ground" to quote the substance of the remark of more than one Eastern TAPPI delegate. Headquarters camp, 16 miles from Longview, where more guides were taken aboard. Up and up and up to the end of steel 34 miles from Longview, at an elevation of 2,812 feet above sea level compared to an elevation of 10 feet at the starting point.

On Board the Paul Bunyan Express

Ed Stamm, General Logging Superintendent Crown-Willamette Paper Company on the left; Miss Helen Kiely, Technical Director, American Writing Paper Company, and Ed Baker, Logging Superintendent Weyerhaeuser Timber Company.

At the end of steel the TAPPI delegates were shown how some of the work is done, with Clyde Corman, assistant superintendent of Weyerhaeuser Timber Company in charge of the display. First Ab Bond, high climber, topped a tree 170 feet above the ground. The spar had not stopped whipping before Mike Paulenuk, another famous high climber, started to scuttle up a tree in a style and at a speed which would make any South Sea Islander, bent on getting a breakfast of cocoanuts, turn green with envy.

The scene shifted — Kibbe and Peterson felled a tree and as the cry of "T-I-M-B-E-R", the signal of a falling tree, rang through the woods, Lund and Johnson set to work undercutting another tree, while Paul Searles, champion bucker, showed just how fast a human can force a well filed saw through a log. All the trees worked on were over 6 feet in diameter at the butt and 200 feet, or somewhat more, high.

Then back to a skidder side, where the delegates saw the machine skidding and loading logs. This unit, with a crew of 22 men, skids and loads from 20 to 25 cars in 8 hours. At this point the delegates got a good idea of the understory, mostly hemlock and white fir, left when the overstory of Douglas fir, noble fir and large hemlock is felled. This understory runs from 25 to 30 cords to the acre and provides an excellent type of pulp wood, with small knots, close grained and with few defects. This type of timber is found in practically every logging operation and, except in a few instances, is not salvaged. This is one reason why sawmill operators and independent loggers — the last firms which sell logs on the open market —are in position to supply a vast volume of pulp wood when there is a market for it.

At the toot of the whistle of the Paul Bunyan special the delegates got aboard and went back to Camp 5, where they were given a chance to dry out a bit and then answered the lunch gong and attested to the skill of W. M. Olson, steward, and his assistants, who feed from 650 to 700 men every day.

After lunch the train returned to Headquarters camp, then ran out 27 miles in another direction to allow an inspection of the timber. This line runs through a good deal of hemlock and here the delegates got an idea of the density of the stand and the large size that the pulp woods attain, not infrequently averaging 300 cords or more per acre for entire sections.

Particular interest was expressed by many of the TAPPI visitors in the reforesting plans of the company. This operation leaves seed trees and does everything possible to keep out fire. The result is that a very heavy stand of young growth is coming up on the land which has been logged, a stand that in 30 years will begin to yield splendid pulp wood if needed at that time.

Turning homeward the delegates once more inspected the timber and after a train ride of 122 miles arrived back at the sawmills and pulp mill at Longview. A number stayed in Longview to inspect the pulp mill, while the others returned to Portland, where they ended a perfect day with a better understanding of the quantity, quality and accessability of the pulp woods of Western Oregon and Western Washington.

The coasters with the picture of Paul Bunyan, used at the stag party Tuesday evening were made of Weyerhaeuser pulp furnished by Weyerhaeuser as a compliment to TAPPI.

Photograph courtesy of the Pulp Division, Weyerhaeuser Timber Co., Longview.

The Paul Bunyan Express Stops for a Picture. Delegates to the TAPPI Convention view logging operations in the big timber as guests of the Weyerhaeuser Timber Company

NEW PACIFIC SECTION OFFICERS

Elected at Portland TAPPI Convention, September 10th to 13th

At the business meeting of the Pacific Coast Section of TAPPI, held Thursday morning, September 13th, new officers were elected to carry on the affairs of the section for the coming year, and the retiring officers were given an unanimous vote of appreciation for their successful administration, including the staging of the International Convention of TAPPI.

Myron W. Black, technical director of the Inland Empire Paper Company of Spokane, was elevated to the chairmanship from the vice-chairmanship which he held this past year. He has been active in TAPPI since the organization of the Pacific Section in October, 1928.

Mr. Black said, when asked for comment upon his election to the chairmanship, "I appreciate the confidence expressed by the members of the Pacific Section in selecting me as chairman, and I hope to warrant their support by carrying on the excellent work of Lawrence Killam, the retiring chairman.

"The holding of the International Convention on the Pacific Coast is the beginning of an even greater interest in the work of TAPPI and will inspire all members of the Pacific Section to greater mutual efforts for the benefit of the entire industry on the West Coast.

"I know I shall have the wholehearted co-operation of every TAPPI member on the Pacific Coast in carrying out a constructive program."

For the coming year two vice-chairmen were elected instead of one as in the past. Increased membership and the resulting additional work required of the officers made the selection of two vice-chairmen imperative.

MYRON W. BLACK
Chairman Pacific Section TAPPI

W. R. Barber, of the Technical Control Department of the Crown-Willamette Paper Company, Camas, Washington, was chosen as first vice-chairman.

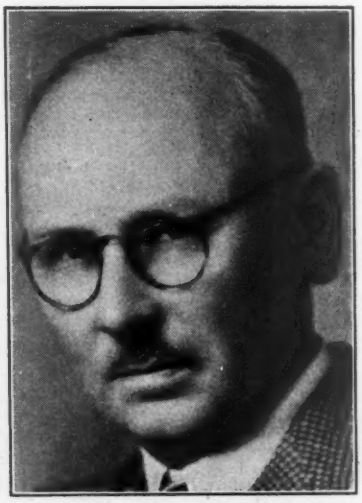
Leo. S. Burdon, manager of the Soundview Pulp Company, Everett, Washington, was elected second vice-chairman. Mr. Burdon has been a prominent executive of the pulp industry for a number of years. Before assuming managership of the Soundview Company he was associated with the International Wood & Sulphite Company, and prior to that with the Rainier Pulp & Paper Company.

Walter S. Hodges was selected as secretary-treasurer of the Pacific Section.

Mr. Hodges was for many years with the Crown-Willamette Paper Company, leaving his position as purchasing agent for the Portland area in 1926 to engage in the pulp and paper mill supply business for himself.

W. R. BARBER
First Vice-Chairman

LEO. S. BURDON
Second Vice-Chairman



WALTER S. HODGES
Secretary-Treasurer

THOSE REGISTERED

C. E. Ackley, Fred E. Alsop, H. Andrews, J. H. Angwine, F. R. Armbruster, G. J. Armbruster, C. L. Bachelder, Eber W. Badcon, C. M. Baker, W. E. Byron Baker, Walter Bain, Albert Bankus, Thos. J. Bannan, W. W. Barrett, R. S. Beall, E. N. Bechard, H. W. Beecher, Louis R. Benjamin, Dr. Henry K. Benson, A. W. Berggren, W. L. Beuschlein, C. F. Beyerl, A. L. Bibbins, L. K. Bickell, Selma Blair, Myron W. Black, L. M. Booth, Geo. W. Bowers, J. C. Bowman, Carl E. Braun, G. S. Brazeau, G. S. Brett, Martin Breuer, G. C. Brewster, Harry A. Brod, Harvey E. Brown, Harold W. Burrows, Olin W. Callighan, Roy Carey, C. P. R. Cash, O. S. Cauvel, H. A. Helder, Harold Murdock, C. H. Champion, A. D. Merrill, A. F. Francis, James Cole, Willis E. Clark, Arthur A. Coffin, Sidney M. Collier, G. N. Collins, Chas. S. Conrad, E. W. G. Cooper, F. L. Cooper, Darrah Corbet, John Cornell, N. W. Coster, D. E. Cousins, A. H. Cox, J. V. B. Cox, J. W. Cronin, B. D. Cruickshank, T. C. Culver, L. L. Cunningham, Dr. C. E. Curran, Henry W. Dauterman, B. W. Dean, H. A. Des Marais, C. P. De Reamer, E. G. Drew, Alec C. Duncan, A. C. Dunham, Carl J. Dupius, G. F. Durand, Roger J. Egan, Frank B. Eilers, E. Ekholm, K. I. Ekholm, J. P. V. Fagan, Carl Fahlstrom, Lyle G. Fear, W. Grant Fiske, Jas. Foxgrover, Frank D. Frampton, A. F. Frances, M. H. Freedman, Harold F. Fretz, Elsie Frundt, Uno G. Fryklund, Ben Gellenbeck, F. C. Gevers, F. C. Gibson, E. P. Gleason, W. H. Goodenough, W. W. Griffith, F. W. Guernsey, H. M. Gustafson, Kenneth B. Hall, John Hamm, I. R. Harcourt, Tom Hargraves, H. H. Harrison, John E. Hassler, Raymond S Hatch, H. A. Hauff, Edward A. Heiss, H. A. Helder, J. W. Hemphill, C. T. Henderson, E. C. Hendrickson, Dr. F. R. Henry, C. C. Heritage, H. Robert Heuer, Walter S. Hodges, E. F. Huckstep, W. F. Hynes, Richard Jennings, Edwin C. John, Roy B. Johns, Alex Johnson, Carl G. Johnson, Marvin C. Jones, W. D. Jorres, H. Jungerman, William Pitt Kellog, W. A. Kelly, W. N. Kelly, P. B. Keyes, C. J. Kern, Mr. B. L. Kerns, Ernie E. Kertz, W. S. Kidd, Helen U. Kiely, L. Killam, Shinji Kimura, Dr. Maurice E. Kinsey, E. P. Klund, Paul Koenig, F. J. Kranhold, D. Vernon Kuykendall, Jr., Jack E. Lackner, James A. Lane, Dr. E. C. Lathrop, Byron E. Lauer, O. L. Le Roux, H. V. Lethlean, N. A. Lewthwaite, H. Liebeck, Hylton A. Long, J. G. Long, H. H. Lowey, A. H. Lundberg, R. V. Maier, R. G. McDonald, D. J. MacLaurin, John C. Mannion, Bill Marshall, Hoke Martin, R. B. Martin, John J. McDonald, W. J. McGinnis, Archibald McLintock, Wm. M. McNair, John McVicker, Geo. S. Meddis Ned Menzies, A. D. Merrill, A. W. Miller, H. Norman Miller, B. D. Millidge, Geo. W. Mitchell, T. E. Moffitt, C. W. Morden, Dr. Harold H. Murdock, A. D. Myers, A. G. Natwick, G. W. E. Nicholson, W. A. Nivling, Sigurd Norman, Edward H. Nunn, Ernest O'Connor, H. B. O'Heir, James Q. Osborne, W. M. Osborne, John R. Owen, R. S. Painter, C. H. Pape, W. D. Parker, E. E. Perso, Herbert Peterson, R. T. Petrie, Lee H. Place, Wm. A. Prier, Albert S. Quinn, J. G. Ramsey, E. R. Rasmussen, S. C. Rasmussen, H. J. Reavis, Lew Reed, Ralph Reid, J. F. Rhoades, H. H. Richmond, Julian Richmond, J. H. Richmond, Carl F. Richter, Cliff M. Rogers, Nat S. Rogers, L. R. Ruch, S. A. Salmonson, P. Sandwell, M. E. Sanford, B. W. Sawyer, R. J. Schadt, H. F. Schenk, J. Scheuerman, John Schibel, R. W. Schneider, H. C. Schwalbe, Harlan Scott, C. R. Seaborne, Ralph Shaffer, F. C. Shaneman, J. M. Shedd, Brian Shera, Tom Shields, Don L. Shirley, Chas. A. Shubert, Paul Shuey, R. H. Simmons, Randolph Simpson, L. E. Smith, Lawrence K. Smith, Ray Smythe, J. L. Somerville, George K. Spence, Homer E. Stafford, Sally Stephan, Mrs. C. F. Stevey, A. G. Stone, E. Sutermeister, Walter H. Swanson, A. Ward Tedrow, Earl G. Thompson, John Traquair, Donald W. Thomson, H. A. Vernet, A. S. Viger, Ralph Waldo, T. J. Waltmon, John F. Weillen, R. L. Weldon, Fred J. Weleber, R. S. Wertheimer, Frank H. Wheelock, M. M. Whitman, A. W. Wickham, W. R. Wiell, Frederick Wierk, Vernon B. Wilfley, Bill Williamson, A. D. Wood, Arthur G. Young, A. Zimmerman.

F. W. Barrette, E. J. Bartells, C. E. Buckner, Leo S. Burdon, A. M. Cadigan, R. E. Chase, Wm. W. Clarke, Walter Clifford, R. B. Wolf, Jr., Minot Davis, W. E. Dornbach, A. S. Gerry, Wm. R. Gibson, L. T. Graham, Thomas W. Grant, O. W. Greenwalt, L. W. Smith, H. Reimer, T. E. Heppenstall, Dr. W. Hirschkind, W. A. Howe, Edwin C. Jahn, H. L. Joachim, O. A. Jorgenson, G. A. Macklem, Chip Nagle, E. A. Norton, F. L. Odom, Wm. Pripp, P. J. Reeves, H. Reimer, J. G. Richards, D. D. Roberts, Ferdinand Schmitz, Ernst Schweitz, Kenneth Shibley, Anton P. Siebers, N. F. Silver, L. W. Smith, R. D. Sollars, H. H. Stilwell C. F. Weiss, Z. A. Wise, Robert B. Wolf, Jr.

LADIES' REGISTRATION

Mrs. Fred Alsop, Mrs. Thos. J. Bannan, Mrs. E. N. Bechard, Mrs. F. M. Benjamin, Mrs. A. W. Berggren, Miss Selma Blair, Mrs. Carl E. Braun, Mrs. G. S. Brazeau, Mrs. Martin Breuer, Mrs. Mabel Brewster, Miss Brewster, Helen E. Burrows, Mrs. A. M. Cadigan, Mrs. Olin W. Callighan, Mrs. Roy S. Carey, Mrs. O. S. Cauvel, Mrs. E. F. Clark, Mrs. Sidney M. Collier, Mrs. G. N. Collins, Mrs. H. A. Des Marais, Mrs. A. C. Duncan, Mrs. R. L. Earnheart, Mrs. Frank B. Eilers, Marie Ekholm, Mrs. Carl Fahlstrom, Mrs. Neta Frampton, Miss Elsie Frundt, Mrs. A. S. Gerry, Mrs. E. P. Gleason, Mrs. L. T. Graham, Mrs. O. W. Greenwalt, Mrs. W. W. Griffith, Mrs. Kenneth B. Hall, Mrs. H. H. Harrison, Mrs. John E. Hassler, Mrs. R. S. Hatch, Mrs. H. A. Hauff, Mrs. H. A. Helder, Mrs. J. W. Hemphill, Mrs. C. C. Heritage, Mrs. H. Robert Heuer, Mrs. W. S. Hodges, Mrs. W. D. Jorres, Dorothy J. Kelly, Mrs. W. A. Kelly, Mrs. C. J. Kern, Mrs. B. L. Kerns, Helen U. Kiely, Mrs. L. Killam, Mrs. G. M. Kirkpatrick, Mrs. F. P. Klund, Mrs. F. J. Kranhold, Mrs. E. C. Lathrop, Mrs. O. L. La Roux, Mrs. N. A. Lewthwaite, Mrs. J. G. Long, Mrs. A. H. Lundberg, Mrs. Walter McBain, Mrs. John McDonald, Mrs. Ned Menzies, Mrs. A. W. Miller, Mrs. C. W. Morden, Mrs. H. R. Murdock, Mrs. A. G. Natwick, Mrs. R. S. Painter, Mrs. L. L. Petrie, Mrs. A. S. Quinn, Mrs. James G. Ramsey, Mrs. J. H. Richmond, Mrs. Carl F. Richter, Mrs. S. A. Salmonson, Mrs. R. J. Schadt, Mrs. R. W. Schneider, Mrs. H. C. Schwalbe, Mrs. Harlan Scott, Mrs. Ralph Shaffer, Mrs. F. C. Shaneman, Mrs. D. L. Shirley, Mrs. A. E. Siebers, Mrs. L. E. Smith, Mrs. J. L. Somerville, Mrs. C. F. Stevey, Mrs. E. Sutermeister, Mrs. Walter H. Swanson, Mrs. Earl G. Thompson, Mrs. A. M. Van Douser, Mrs. A. S. Viger, Mrs. T. J. Waltmon, Mrs. R. L. Weldon, Nell C. Wiell, Mrs. A. Zimmerman.

SUCCESSFUL YEAR FOR COAST TAPPI

Under the chairmanship of Lawrence Killam, the year 1933-1934 has been one of successful accomplishment for the Pacific Section of TAPPI. The men chosen to handle the various committees in charge of the International Convention in Portland performed their part with a cooperative spirit which made the convention highly successful.

Albert S. Quinn, the other retiring officer, has ably served as secretary-treasurer of the Pacific Section for the past two years.

MACHINERY AND SUPPLY EXHIBITS

LOBBY DISPLAYS: The Chromium Corp. of America; Pacific Coast Supply Company, including: Eastwood Nealley Corp., F. C. Huyck & Sons, Texas Gulf Sulphur Co., Heller & Merz Corp., California Cotton Mills Co., E. D. Jones & Sons Co., The Norton Company, Jos. J. Plank & Company; Morden Machines Company.

DISPLAYED IN JUNIOR BALL ROOM, Vaughan Motor Co., Kenneth B. Hall. Representing: Improved Paper Machine Corp., Huntington Rubber Mills, Noble and Wood Machine Co., Kirkwood Log Barker; General Electric Co., Western Gear Works & Pacific Gear & Tool Works, R. M. Wade & Co., C. C. Moore & Co. Representing: The Cochrane Corp., The Carborundum Co., Associated Oil Co., The Bristol Co., Westinghouse Electric & Manufacturing Co., The Walworth Co., Air Reduction Sales Co., Gladding McBean & Co., Smith Iron Works, Edgar Bros. Co., Link-Belt Company., Great Western Electrochemical Co., Nash Engineering Co., The Foxboro Co., The Electric Steel Foundry Co., The Columbia Steel Co., Johns Manville Sales Corp. with Goodyear Rubber & Asbestos Co., Chain Belt Co., Oliver United Filters, The Bagley & Sewall Co., The B. F. Perkins & Sons Inc., The Donald M. Thompson Co., Representing: The Farval Corp., American Flexible Coupling Co., Cleveland Worm & Gear Co.; Keystone Lubricating Co., The Crane Co., The Potdevin Machine Co., The Sumner Iron Works, Pacific Pulp & Paper Industry, H. P. Scheel Jr.

DONORS OF GOLF PRIZES

Air Reduction Sales, Co., American Hawaiian Steamship Co., Arrow Line, Associated Oil Co., Balfour, Guthrie & Co., E. J. Bartells, Crane Co., Draper Brothers, General Dyestuffs Corp., General Electric Co., General Paint Corp., General Rubber & Supply Co., Gladding, McBean & Co., Goodyear Rubber & Asbestos Co., Great Western Electrochemical Co., Heller & Merz Corp., Hooker Electrochemical Co., Huntington Rubber Mills, Luckenbach Steamship Co., Marshall-Wells Hardware Co., McCormick Steamship Co., Multnomah Hotel, National Aniline & Chemical Co., National Lead Co., New Jersey Zinc Co., Oregon Brass Works, Paper Makers Chemical Corp., John A. Roebling Sons Co., Shell Oil Co., Sierra Talc Co., Ray Smythe, Standard Oil Co., States Steamship Corp., Stebbins Engineering & Mfg. Co., Sturdevant Co., Tacoma Electrochemical Co., Toledo Scale Co., Van Waters & Rogers, Union Oil Co.

PACIFIC COAST MILLS IMPROVE FINANCIAL CONDITION

Statements For 1933 and First Half of 1934 Show Larger Sales and Profits – Rainier Declares Four Dividends

That many Pacific Coast mills are experiencing a very encouraging improvement in both volume of sales and in net profits is evidenced by the complete statements recently issued for 1933 and for the first half of 1934. This year is proving to be a better one for western plants than was 1933.

Rainier Declares Four Dividends

Upon releasing August 15th the statement for the fiscal year ending April 30th, 1934, Mr. E. M. Mills, president of the Rainier Pulp & Paper Company of Shelton, Washington, told stockholders:

"Improved conditions in the pulp trade mentioned in our last annual report have continued and the indications are that this improvement will exist for some time."

The demand for the special types of pulp produced by the Rainier company increased during the past year to a point necessitating increased production. This will be obtained through long-time contracts with the Olympic Forest Products Company and the Grays Harbor Pulp & Paper Company under which these companies will manufacture Rainier's special pulps under direction of the Rainier technical department.

Directors of the Rainier Pulp & Paper Company declared four dividends on the Class A stock. The first is payable September 5th and equals $2.50 a share. Three quarterly dividends were also voted on the Class A stock, each of 50c a share. The first is payable December 1st next, the second March 1st, 1935, and the third, June 1st, 1935.

For the year ending April 30th, 1934, the earnings on the Class A stock amounted to $4.58 per share as compared with less than $2 in the preceding fiscal year. Unpaid dividends accrued on Class A stock as of April 30th, 1934, amounted to $683,333.33, equivalent to $6.83 per share. By their action, August 22nd, in declaring four dividends totalling $400,000, the directors satisfied all dividend arrearage on the Class A common stock up to and including the period ending December 1st, 1932.

The complete balance sheet follows:

RAINIER PULP & PAPER COMPANY
Balance Sheet, April 30, 1934

Assets

Current:		
Cash		$667,955.52
Accounts receivable:		
Customers	296,615.87	
Other	27,641.45	
		324,257.32
Inventories, valued at the lower of cost or market:		
Finished merchandise:		
On hand	253,177.68	
On consignment	21,058.96	
	274,236.64	
Raw materials and supplies	96,547.53	
		370,784.17
Total current assets		1,362,997.01
Investment bonds, at cost		9,100.00
Plant and equipment, at cost:		
Land	42,490.22	
Buildings, machinery and equipment	$3,652,227.52	
Less, allowance for depreciation	932,236.03	
	2,719,991.49	
		2,762,481.71
Contracts and options		21,600.00
Deferred charges		16,871.50
		$4,173,050.22

Liabilities

Current:		
Accounts payable, including accrued expenses		$424,721.55
Provision for federal income taxes:		
Current year	$77,692.60	
Prior years, including $51.44 interest	535.29	
		78,227.89
Total current liabilities		502,949.44
First Mortgage Six Per Cent Sinking Fund Convertible Gold Bonds, due in 1946:		
Authorized $2,500,000; outstanding none; authentical and held in treasury $500,000, of which $54,000 were issued and repurchased.		

Capital		
Capital stock, no par value:		
Class A, 100,000 shares		
Class B, 123,000 shares	2,780,086.00	
Paid-in surplus	133,515.13	
Earned surplus:		
Balance, May 1, 1933	$298,039.85	
Net income for the year ended April 30, 1934, details annexed	458,459.80	
Balance, April 30, 1934	756,499.65	
		3,670,100.78
		$4,173,050.22

Note: Cumulative dividends of $2.00 per share per year on Class A stock accrued since December 1, 1930, aggregating $683,333.33, have not been declared or paid.

INCOME ACCOUNT

For the Year Ended April 30, 1934

Sales, net of discounts		$3,564,975.83
Cost of goods sold and expenses, exclusive of depreciation		2,830,033.20
Profit from operations before depreciation		734,942.63
Depreciation provision for the year		171,878.12
Profit from operations		563,064.51
Other expenses, net:		
Loss on disposition of capital assets	$23,763.97	
Miscellaneous	2,664.29	
		26,428.26
Income before federal income tax		536,636.25
Federal income tax, including additional assessment for prior year		78,176.45
Net income		$458,459.80

CROWN-WILLAMETTE HAS GOOD FIRST QUARTER

The Crown-Willamette Paper Company and subsidiaries, including Pacific Mills Limited, reported for the first quarter of the fiscal year, April 30th to July 31st, 1934, a net profit of $459,846. This is an increase of $269,261 over the net earnings for the same period of 1933.

The summarized and consolidated profit and loss statement for the three months ending July 31st follows:

Crown-Willamette

	1934	1933
Profit before depreciation, depletion, bond interest and income taxes	$1,606,683	$1,227,799
Less:		
Depreciation	604,054	573,743
Depletion	173,101	134,459
Bond interest	270,237	285,835
Income taxes	92,032	45,000
Total deductions	1,139,424	1,039,037
Net profit before deduction of minority stockholders' interests	467,259	188,762
Less: Interest of minority stockholders in profits of Pacific Mills Limited	7,413	.....
Add: Minority stockholders proportion of losses of Pacific Mills Limited	.....	1,823
Balance of profit accrued to Crown Willamette Paper Company stockholders	$ 459,846	$ 190,585

SOUNDVIEW HAS PROFITABLE MONTH

The Soundview Pulp Company, which began operating the 175-ton bleached sulphite pulp mill at Everett, Washington, early in March upon the termination of the lease held by the Puget Sound Pulp & Timber Company, is making good progress.

Profit for the month of July amounted to $20,370.92 after all charges except federal taxes, and including depreciation of $20,000 and a contingency reserve of $4,000.

During the month 4,765 tons of pulp were produced and 6,276 tons were sold. The inventory July 31st stood at 3,319 tons.

The showing is all the more impressive when it is recalled that water shipping was almost at a standstill in July due to the longshoremen's strike.

ST. HELENS IN THE BLACK AGAIN

The St. Helens Pulp & Paper Company of St. Helens, Oregon, producers of kraft papers and bags, made a profit in 1933 of $46,308 as compared with a loss of $33,181 in 1932. The profit does not fully reflect the improvement made during 1933 in the company's financial condition.

In 1932 the company as a precautionary measure obtained a five year moratorium on its bond sinking fund provisions, but terminated the agreement at the end of 1933, meeting the terms of the sinking fund in full. Besides retiring its bonds according to schedule, St. Helens paid a dividend of 25 cents a share December 1st, 1933. On March 1st, 1934, a dividend of 20 cents a share was paid, but none was declared in June and no action has been taken as to future dividend policy.

Earnings from operations in 1933 were $287,937 as compared with $189,904 in 1932. Non-operating profits stepped the 1933 earnings up to $297,839 against $198,359 in 1932. Earnings per share on the $10 par common stock was 23 cents as compared with a deficit of 16 cents a share in 1932.

The full $75,000 amount of the bond sinking fund requirements were complied with, and the first mortgage 6½% bonds outstanding were reduced to $625,000. Organization expense was written off totalling $65,262.

St. Helens maintained a strong cash position, the ratio of current assets to current liabilities being 6.22 to 1. The comparative balance sheets for 1933 and 1932 follows:

ST. HELENS PULP & PAPER CO.

Comparative Balance Sheets

Assets

	Dec. 31, 1933	Dec. 31, 1932
Cash, market securities	$ 249,675	$ 247,169
Receivables	251,533	217,362
Inventories	365,456	306,754
Life insurance	22,616	.....
Current, total	889,280	771,285
Plant, timber, etc., less depreciation*	2,911,878	3,063,363
Invest, advances	23,147	26,000
Def. charges	50,841	103,965
Total assets	3,875,147	3,964,613

Liabilities

Accounts payable	$ 75,830	$ 82,121
Interest accrued	10,156	15,876
Wages accrued	21,304	.....
Taxes accrued	35,506	22,081
Current total	142,796	120,078
1st mortgage bonds	625,000	700,000
199,934 shares	1,999,340	1,999,340
Surplus, paid	1,031	1,031
Surplus, earned	1,106,979	1,144,164
Total liabilities	3,875,147	3,964,613

*Depreciation account Dec. 31, 1933, $974,548.

CROWN-ZELLERBACH PROFIT DECLINES

For the three months ending July 31st net profit of Crown-Zellerbach Corporation was $267,182 as compared with $326,409 in the corresponding 1933 period. In the same period the net profit of Crown-Willamette Paper Company, a subsidiary of Crown-Zellerbach, increased as reported above.

The Crown-Zellerbach profit amounted to $1.06 a share on the 250,601 shares of preference stocks, series A and B outstanding as against $1.30 a share for the same three months period of 1933.

Summarized earnings statement of Crown-Zellerbach for the respective three months period, April 30th to July 31st, follows:

Crown-Zellerbach

	1934	1933
Profit before depreciation, depletion, bond interest and income taxes	$2,280,059	$1,993,403
Deduct:		
Depreciation	889,503	857,907
Depletion	175,425	134,766
Bond interest	372,864	398,148
Income taxes	156,172	87,318
Total deductions	$1,593,964	$1,478,139
Net profit before deduction of minority stockholders' interests	686,095	515,264
Less:		
Interest of minority stockholders	418,913	188,855
Balanceof profit accrued to stockholders	$ 267,182	$ 326,409

LEADBETTER MILLS MAKE SUBSTANTIAL PROGRESS

With a net profit of $89,133 for 1933, the Oregon Pulp & Paper Company of Salem, Oregon, showed a great improvement over 1932 operations which resulted in a deficit of $198,654, according to a statement recently released by F. W. Leadbetter, president of the company.

Oregon Pulp & Paper's income before deducting charges was $336,683 for 1933 as against an income of but $75,230 for 1932. For 1933 depreciation totaled $213,849 and bond interest was $63,699.

Mr. Leadbetter stated that the mills (Oregon Pulp & Paper, Columbia River Paper Mills and the California-Oregon Paper Mills, all members of the Leadbetter group) have reduced their current liabilities and increased their current assets. They also paid their bond interest which was due. Neither the Oregon Pulp & Paper Company nor the Columbia River Paper Mills now has any bank indebtedness.

The statement added that under an arrangement with bondholders the maturities of the bonds of the two above mentioned mills were extended four years until 1937, and 99 per cent of the outstanding bonds of the Oregon Pulp & Paper Company were so extended. More than 97 per cent of the outstanding bonds of the Columbia River Paper Mills were also extended. The entire bond issue of the California-Oregon Paper Mills has been retired, anticipating maturities by a full year. Outstanding first mortgage bonds of the Oregon Pulp & Paper Company have been reduced to $980,000.

The Columbia River Paper Company owns almost all of the common stock of the Oregon Pulp & Paper Company and the California-Oregon Paper Mills. It also owns the greater portion of the stock of the Columbia River Paper Mills of Vancouver, Washington. The Columbia River Paper Mills sustained a loss in 1933 of $198,665 compared to a loss in 1932 of $226,225. At the end of 1933 the total assets of the Columbia River Paper Mills are listed at $5,580,975.31.

The California-Oregon Paper Mills in 1933 made a net profit of $44,913 as compared with a net profit in 1932 of $470.

Current assets of the Oregon Pulp & Paper Company at the end of 1933 were $849,884 with current liabilities of $357,944. A considerable proportion of the liabilities are taxes, which are being paid by a ten-payment five year plan. Preferred stock outstanding amounts to $800,000, and common stock to $1,296,700. Earned surplus was $401,755.

Mr. Leadbeter stated that "Betterment in operating conditions as shown last year has occurred since January 1st, 1934. At the present time the mills are operating only part time due to a scarcity of orders.

All the mills owned by the Columbia River Paper Company showed a small profit for the first six months of 1934 after depreciation and all charges, according to Mr. Leadbetter.

THE PULPWOOD FORESTS OF OREGON and WASHINGTON

By THORNTON T. MUNGER,
Director Pacific Northwest Forest Experiment Station*

This convention is very appropriately being held here in the geographic heart of a great pulpwood forest region. Within 250 miles of where we sit are at least 350 million cords of potential pulpwood of species of proven suitability, enough to supply all the pulp mills of the country for half a century. Eastward from Portland to the summit of the Cascade Range and westward to the Pacific Ocean is a rich forest belt that extends from Alaska southward across British Columbia, Washington and Oregon into northern California. It is a temperate humid belt characterized by a great variety of evergreen or coniferous tress that form dense, tall, and rapid-growing forests.

My remarks today will concern almost wholly Washington and Oregon, and particularly the western parts of these two states. This region, west of the summit of the Cascade Range, is often spoken of in forestry circles as the Douglas fir region because of the predominance of this tree.

Here is a great store of sawtimber and of pulp timber, which has within the last decade and a half attracted additional pulp and paper plants. Not only is the wood supply in this region very large, but it is accessible to tidewater and is purchasable on reasonable terms from either public or private owners. Moreover, the area of permanent forest land is large, and has a high capacity to grow successive crops of timber.

In these days of planned industry, it is well to know exactly what volume of basic resources are available, at what rate they might be renewed, and what rate of depletion they can stand without exhaustion. Questions such as these regarding the present and prospective forest supplies in the Pacific Northwest are now in a fair way to be answerable, for the United States Forest Service is making a very detailed survey of the present stand of forest resources,

THORNTON T. MUNGER

of their rate of depletion, and of their rate of growth. This survey is finished for western Washington and western Oregon, and the figures that I shall give you today for that region are condensed from the very exhaustive statistics which that study has yielded.

A further word about the forest geography of Oregon and Washington may be helpful to those of you who are not personally familiar with it. Roughly speaking, two north and south series of mountains cross both states, the Coast Mountains, which are comparatively low, and the Cascade Range, which reaches to above timber line. In between is a trough occupied by Puget Sound and a series of valleys, the Cowlitz, Willamette, Umpqua and Rogue River valleys, and here are Seattle, Tacoma, Portland, Eugene ,and most of the agricultural and urban population. Between the crest of the Coast Range and the Pacific Ocean is a narrow strip known as the fog belt, in which western hemlock and Sitka spruce are predominant, often to the exclusion of Douglas fir. The slopes of the Cascade Range, on the eastern edge of this forest region, are for the most part rugged in topography, heavily forested, largely untouched by the ax, and held in public ownership. Douglas fir is the predoninant tree on the lower slopes, but usually with some admixture of pulp species, but it gives way at the higher elevations to a forest comprised largely of the pulp species, the hemlocks and balsam firs.

Between the fog belt of the coastal strip and the slopes of the Cascades is an extensive belt of valley and foothill land, much of it quite rough, where Douglas fir was the predominant tree and where pulp species were a minority admixture. This belt is largely in private ownership, and has been the scene of active logging for many years; much of it is now cut over.

In marked contrast to western Washington and western Oregon is the region east of the Cascade Range, which has a dry, rigorous climate, resulting either in treeless desert or in open, slow-growing forests, in which ponderosa pine predominates and pulp species are much in the minority.

Within western Oregon and western Washington there are 22 species of trees that occur in considerable quantity and that might be made into pulp, recognizing that almost any wood will make paper. Which of these shall I consider as pulpwoods in trying to give you an estimate of the supply of raw materials in this region?

Douglas fir, which comprises 40 per cent of the sawtimber stand of western Washington and 77 per cent of that of western Oregon, is, as I have said, the dominant tree of the region. It sometimes occurs in practically pure stands; elsewhere in mixture with a varying proportion of cedar, hemlock, spruce, balsam fir and the other west coast species. Trees are found over 300 feet high and 10 feet in diameter, and some stands will cut over 100,000 board feet per acre, but the ordinary run of the trees of the virgin forest are smaller and give much less yields

*Presented at the International Convention of TAPPI, Portland, Oregon, September 10th to 13th, 1934.

than this. The wood of Douglas fir is rather hard and heavy, with a marked summerwood zone. Because of the dark color and the resin, it does not pulp and bleach readily; it is used to some extent for kraft papers and board, and occasionally in mixture with other woods for writing paper. The Madison Laboratory of the Forest Service has made experimentally some very nice sheets of white paper by the semi-sulphite process. But apparently by no now known commercial process is Douglas fir as yet a competitor of the primary pulpwoods for the better classes of paper; in the kraft field it comes into keen competition with other species, like jack pine of the Lake States and the southern pines, of which the potential supply available for pulping is enormous. Of Douglas fir in western Washington and western Oregon, there are some 331 billion board feet, but for the purposes of this discussion we will not include it as a pulpwood.

The cedars, the pines, the larches and the hardwoods, except cottonwood, will likewise be left out of consideration as sources of pulpwood supply. There remain then as the primary pulping species of the region, the spruces, the hemlocks, the balsam firs (or white firs) and cottonwood.

Just a word about the several species, both those now used and those likely to be used in the future. The spruces have been, of course, the standard of comparisons for pulpwoods. Oregon and Washington have two species (ignoring the very rare weeping spruce of the Siskiyou Mountains). Along the Coast strictly within the fog belt is Sitka spruce, 6¾ billion board feet* of it in Washington and nearly 5 billions in Oregon. This species is found throughout most of its range in mixture with other species, especially with western hemlock. It is now used by the Puget Sound and Columbia River paper mills, but it is also in demand by the lumber, veneer and cooperage plants. As a rule, the better and larger logs find their way to the latter industries, only the smaller and rougher logs going to pulp mills. Approximately 90 thousand cords of Sitka spruce are pulped annually in Oregon and Washington. This is only 8 per cent of the wood used by the industry, whereas a decade ago spruce comprised 20 per cent of the supply.

Engelmann spruce, which is very similar in wood, foliage, bark and cones to Sitka spruce though a much smaller tree, lives in the high country, mostly on the national forests. There is only about ¼ billion board feet of Engelmann spruce west of the Cascade Range summit.

Of the hemlocks there are two species, the common western hemlock characteristic of the slopes of the Cascades and Coast Range, and the mountain hemlock which prevails at altitudes above 3,000 or 5,000 feet. The former is now largely used for pulp and for lumber, but the mountain hemlock is above present logging development. Western hemlock extends from southern Alaska to central California, and from Montana westward to the Pacific Ocean. It is essentially a tree of moist and cool situations and is most abundant and attains its best development in the fog belt of the Coast and on the humid slopes of the Cascades, particularly in Washington. It will endure much shade and is frequently found as an understory in mixture with Douglas fir and Sitka spruce. The proportion of this species in the stand is greatest in the north and diminishes to the south. Western hemlock now makes up nearly 80 per cent of the pulpwood used in Oregon and Washington, as compared to somewhat less than 60 per cent ten years ago. Washington had orginally, and still has, much more hemlock than Oregon. The figures for western hemlock are 80 billion board feet in Washington and 25 billion board feet in Oregon. The estimates of mountain hemlock are a little over 5 billion feet for both states, an auxiliary supply for the future.

The balsam firs or white firs or true firs, as they are variously called, are members of the genus Abies, and there is so much confusion about them that a word of description may not be amiss. There are six of this family in Washington and Oregon; they look very much alike and are therefore often confused; their common names are badly jumbled in usage. They are close cousins to the eastern balsam fir used by the northeastern and Lake States pulp mills. They are all good pulping species.

One of the six, lowland white fir, is a tree of the low country, and is therefore commonly encountered in present logging and pulpwood operations and forms the major part of the 135 thousand cords of so-called white fir used each year in Oregon and Washington. The other firs are trees of the mountains, confined chiefly to the national forests and other public lands, and little cut at present. These mountain-loving balsam firs, as called by the Forest Service, are silver fir, noble fir, Shasta fir, white fir and alpine fir.

Silver fir, the most abundant of the group, occupies quite a wide altitudinal belt on the Cascades and Olympic Mountains. It has a very beautiful foliage, rich green above and silvery beneath, and the bark of the young trees is likewise strikingly silvery. Noble fir is a fastidious tree of certain altitudes and exposures; it excites admiration for its immense, cylindrical trunks, which yield boards as wide and clear as the best Douglas fir, and resembling hemlock in texture. Shasta fir is very like noble fir, but ranges farther south on the Oregon Cascades. White fir, likewise, is so similar to the lowland white fir, except in the matter of habitat, that for all practical purposes they are one. Alpine fir is the omnipresent tree that fringes the meadows and shades the late snowbanks in the high country, recognized anywhere by its sharp, dense, spire-like crown, built to shed the snow.

These six balsam firs must be regarded as an important reserve supply of pulpwood, available when logging works farther back into the hills. The estimate of the sawtimber volume of all the six species is 33½ billion feet in Washington and in Oregon 14½ billion feet, of which silver fir comprises about two-thirds.

Cottonwood is the last species to be mentioned as a pulpwood. It was the mainstay of the first local paper mills and is still used largely by some. The amount required each year by the Oregon and Washington mills approaches 50 thousand cords. It is difficult to estimate the supply of this species, because it occurs so scatteringly as fringes along the watercourses and as single trees here and there on farms. The forest survey estimate is a quarter of a billion feet about evenly divided between the two states. One company has experimented with cottonwood plantations

Continued on next page

*The estimates herein given are the log scale contents of trees suitable for sawtimber and over 16 inches in diameter in the coniferous trees and over 12 inches in the hardwoods. A better standard of estimating pulpwood supplies would be the entire cubical contents of all the trees, or the cordwood content, since pulpwood cutting utilizes more of the tree and more of the smaller trees than do sawtimber operations. The forest survey will have eventually estimates in cubic feet for the entire stand, but the compliations are not yet complete. I am therefore compelled to use today the board-foot sawtimber estimates only. With certain species the trees under 16 inches in diameter comprise a very considerable portion of the stand which the pulpwood cutter might use. The estimates that I am giving for board feet of sawtimber are therefore quite conservative in appraising the supply available for the pulp industry.

"The Pacific Coast has without doubt the growing capacity to produce for ALL TIME a very large volume of timber, of which enough can be of the acceptable pulpwoods to STOCK IN PERPETUITY MORE MILLS THAN THERE ARE AT PRESENT.

"I have given you enough data, I believe, to show rather convincingly that the pulp and paper industry of western Washington and western Oregon is situated very favorably with reference to its supply of wood. THERE IS ENOUGH PULP TIMBER STANDING IN THE FORESTS NOW TO STOCK ALL THE PRESENT PLANTS FOR MANY, MANY YEARS, AND TO JUSTIFY CONSIDERABLE EXPANSION OF THE INDUSTRY.

on alluvial land and attained a yield of 40 cords per acre in 20 years.

Adding up now the estimated supply in western Washington and western Oregon of the spruces, hemlocks, balsam firs and cottonwood—considering the sawtimber trees alone and disregarding the small trees, tops and mill waste that would be available for the pulp mills—we have 170 and a fraction billion feet. This is equivalent to over a third of a billion cords or 250 times the annual requirements of the present paper mills of this region, even if they all ran 24 hours a day and used forest wood or sawlogs exclusively. We must not forget that within this same trade territory to the north and east are additional reservoirs of pulp timber. In southeastern Alaska the forests are almost exclusively of pulpwood species, Sitka spruce and western hemlock, of which there are estimated to be 80 billion board feet, as yet hardly touched by ax or saw. Then there are the redwoods of California, which some day may play an important role in paper making.

British Columbia with forests similar to those of western Washington is estimated to have 276 billion board feet of which over half is of the primary pulpwoods. The forests of the Inland Empire of northeastern Washington, extreme eastern Oregon, and northern Idaho also contain some pulpwood species incidental to more valuable and numerous lumber trees, little used as yet, but a potential source for the future.

These statistics of pulpwood supplies, however, are rather meaningless since but a fraction of all this great storehouse of timber of the pulpwood species can be considered as available for the pulp and paper industry. Every one of these species has value for other purposes. To some extent the sawmills and the paper mills will compete for their raw supply. This will be the case particularly with Sitka spruce and cottonwood, the amount of which is not commensurate with the demand there is likely to be from both industries. The sawmills are now cutting for lumber 2½ times as much of the pulpwood species as the pulp companies are logging for pulp purposes.

However, the prevailing relationship of the paper mills and the sawmills in the Pacific Northwest is reciprocal, rather than competitive. One of the soundest features of the set-up of the forest industries in western Washington and western Oregon is the integration between the paper industry and the sawtimber, veneer and other wood-using industries. This is demonstrated in various ways. Sometimes sawmill and pulp mill are under the same roof. Usually the lumber and the pulpwood trees are logged by the same operator with the same equipment and hauled together to tidewater or common carrier points. Then the logs are sorted, those best suited for lumber going to the sawmills, and those best for paper going to the pulp mills. Even the individual log is divided between the two uses, the clear portions going for lumber, the coarse portions going to the chippers. The utilization of sawmill waste for paper pulp gives a salvage revenue to the lumberman, and gives the paperman nearly a third of his wood supply.

In the woods is a staggering amount of potential paper pulp unsuitable economically for salvage, yet still unused by the paper industry.

I expect and hope that this complementary relationship between the two industries will go even farther.

For those who are looking to the future, the potential productive capacity of the land is of more real consequence than the present stand of merchantable timber. Regardless of the volume of the present stand, it would be exhausted in time were there no growth. But forests are a renewable resource; the rate of growth of these Pacific Coast forests is high; the acreage of permanent forest land is large. A paper mill with its huge investment must be assured of a very long-time, if not a permanent, raw supply. The open log markets of Puget Sound, Columbia River and Grays Harbor are not an assured source of pulpwood. Paper mills prefer to have their own supply in ownership or under contract. To carry a many years' supply of virgin stumpage entails a needlessly large capital outlay. The wood supply for two or three decades hence can be grown upon the land now covered with young stands or upon land yet to be logged.

The measurement of some fully stocked stands in the spruce-hemlock forests of the fog belt illustrate the possibilities for pulpwood timber growing. These are such stands as paper companies might be expected to have in the future if they took now, in the course of logging, certain simple measures to assure regeneration, and were seriously in the business of managing their forest properties on a sustained yield basis.

A 39-year-old stand of Sitka spruce and western hemlock near Tillamook, Oregon, on land once cleared for a farm showed a volume of 8,073 cubic feet of wood per acre, equivalent to about 50 cords of usable cordwood. A 77-year-old stand of hemlock, spruce and Douglas fir on the Cascade Head Experimental Forest has a volume of about 20,000 cubic feet per acre, indicating a growth of better than two cords per acre per year. These stands are typical of conditions which can be attained under good forestry practice. Instances might be multiplied to show how advantageous are the fog belt pulpwood forests for growing a perpetual supply.

One phase of the forest survey of western Washington and western Oregon recently completed is a study of the current growth and of prospective future growth of the permanent forest lands of the region.

It appears that the large area of virgin timber is stagnant in growth, that a considerable area of the logged land is so devastated as to be at present almost unproductive, but that the several million acres of immature forest are putting on volume of wood equivalent to about 1 billion cubic feet a year. However, it is expected that in 20 or 25 years, with the conversion of stagnant virgin stands into young growing

"One phase of the forest survey of western Washington and western Oregon recently completed is a study of the current growth and of the prospective future growth of the permanent forest lands of the region.

"It appears that the large area of virgin timber is stagnant in growth, that a considerable area of the logged land is so devastated as to be at present almost unproductive, but that the several million acres of immature forests are PUTTING ON A VOLUME OF WOOD EQUIVALENT TO ONE BILLION CUBIC FEET PER YEAR. However, it is expected that in 20 to 25 years, with the conversion of stagnant virgin stands into young, growing stands and with better fire protection, the actual growth will have STEPPED UP to 1¼ BILLION CUBIC FEET PER YEAR.

"In the more distant future when the non-growing old stands are out of the way and all lands are in producing condition, it is estimated that THE POTENTIAL ANNUAL GROWTH FOR THE REGION WILL BE 2¾ BILLION CUBIC FEET, without assuming full stocking or perfect fire prevention, or very intensive utilization."

stands and with better fire protection, the actual growth for the region will have stepped up to about 1¼ billion cubic feet a year.

In the more distant future when the nongrowing old stands are out of the way and all lands are in producing condition, it is estimated that the potential annual growth for the region will be 2¾ billion cubic feet—without assuming absolutely full stocking or perfect fire prevention or very intensive utilization.

These growth estimates—1 billion cubic feet a year at present, 1¼ billion cubic feet 20 to 25 years hence, and 2¾ billion cubic feet in the more distant future are for all species of the region. Perhaps a quarter or a third will be of the principal pulping species.

Thus it appears that the present annual consumption of the western Washington and western Oregon paper industry, some million and a third cords, could be met several times over by the annual growth of the pulpwoods in this forest area 25 years and more hence. With intensive forestry the forest acreage would support in the more remote future an even larger industry, provided the paper mills got their due quota of the dual purpose woods in competition with the sawmills, veneer plants, etc.

These are big figures. They are very reassuring. The Pacific Northwest has without doubt the growing capacity to produce for all time a very large volume of timber, of which enough can be of the acceptable pulpwoods to stock in perpetuity more mills than there are at present. This, of course, can be accomplished only if the lands that are logged over are kept productive, and if fires are controlled. The more intensive the forest management the better and larger the future forest crop will be.

I have given you enough data, I believe, to show rather convincingly that the pulp and paper industry of western Washington and western Oregon is situated very favorably with reference to its supply of wood. There is enough pulp timber standing in the forests now to stock all the present plants many, many years ,and to jusify considerable expansion in the industry.

The sawmills acting as a complement to the pulp mills can furnish to the advantage of both industries by-product, low-grade logs, slabs and edgings that alone will go a long way toward stocking the pulp mills.

The great acreage of highly productive forest land, if given proper treatment, has a permanent productive capacity of spruce, hemlock, and balsam firs far in excess of the present installed pulp mill capacity.

AL QUINN OPERATED ON

A. S. (Al) Quinn, Pacific Coast manager of the Stebbins Engineering Company, and secretary-treasurer of the Pacific Section of TAPPI was operated upon for appendicitis Sunday evening, August 26th. Al recovered rapidly and attended the TAPPI convention which he had worked hard to help make a success.

From authoritative sources we are advised that after the operation and before he came out from under the ether, Al was telling his crew in forceful language how to line a digester properly, and urging them to get the job done so he could attend the TAPPI convention.

GRAYS HARBOR EMPLOYEES PICNIC

Riverside Park was the scene of fun for employees of the Grays Harbor Pulp & Paper Company on Sunday, August 26th. There was a woman 's baseball game and horseshoe pitching contest. E. Hamilton was chairman of the committee arranging the picnic.

B. C. CARTONS WIN CONTEST

Cartons designed and manufactured in British Columbia carried off honors at the recent convention of the Pacific Coast Advertising Clubs Association held in Portland.

First prize was awarded a Canadian Bakeries carton. The boxboard from which it was made comes from the mill of the Sidney Roofing & Paper Company, Ltd., of Victoria, B. C. The National Paper Box Limited made this carton and two others which received honorable mention, a group for Pacific Mills Limited and another for the Canadian Tobacco Limited display.

McNAIR WITH WEYERHAEUSER

John J. McNair, research fellow in wood chemistry at the University of Idaho School of Forestry this past year, has joined the pulp division of the Weyerhaeuser Timber Company at Longview as chemist.

At the 1934 commencement exercises Mr. McNair was given the degree of master of science in forestry. His research work for the master's degree dealt with one phase of the chemistry and use of lignin.

STATE PRINTER BUYS WASHINGTON PAPER

Washington state printer, Ole Olson, reports for the year ending April 30th, 1934, that his shop used a large amount of paper made in the state, as it is his policy to favor home industry.

The reports states that of 70 tons of bond paper purchased 50 tons were produced in Washington; of 80 tons of book paper 78 tons were from Washington mills; and out of three million envelopes purchased all but 75,000 were made in this state.

RAINIER BUILDS EMPLOYEE COOPERATION

Once a month department heads, junior and senior executives, get together at dinner for a round table discussion of management and production problems affecting inter-department efficiency.

THE CASTING PROBLEMS OF STAINLESS STEEL

By ERNEST G. SWIGERT*

With the growing use of stainless steel in the pulp and paper industry an important market for corrosion resisting castings is being developed. Much has been written on the properties and metallurgy of the various commercial analyses but the problems which are peculiar to the foundry both from the metallurgical and the mechanical standpoint are not generally so well understood. It is the purpose of this paper to discuss these problems from the practical rather than the technical viewpoint in the hope that a better understanding will benefit both the manufacturer and the user.

To begin with, the basic difference between a rolled and a cast article lies in the crystalline structure of the steel. The ingot from which plate or bars are rolled follows the basic laws of crystallization for that steel and is exactly comparable to a casting of the same steel, but when this same ingot is passed through dozens of rolls to form a plate the individual crystal of the steel has been broken into many smaller crystals. This gives the rolled structure two basic advantages: First, the mechanical refinement of the crystalline structure definitely improves the physical properties of the steel. Considered in its simplest form it means that where one crystal is replaced by ten or twelve, the cleavage planes or lines between the crystals are more broken up, resulting in greater strength, ductility and shock resistance. The second advantage of the rolled structure is that it is free from shrinkage strain and defects such as blow holes.

On the other hand, the casting or ingot structure has two advantages over the rolled structure. In the first place, the metal can be poured into whatever shape is desired; that is, the designer can, within limits, use metal where he needs it and save metal where it is not needed. The second advantage of the casting structure was not generally understood until recently. It was known that castings had a greater resistance to fatigue than forgings or rolled sections but it was not until the development of the microscopic study of steels that the reason became apparent. When steel solidifies the crystals form as true polyhedrons with the planes between the crystals forming a very irregular, broken surface. The breakage of steel, either from shock or fatigue always follows the plane between the crystals. In forming a plate the mechanical rolling of the structure to some extent distorts these polyhedrons and tends to orient them in one direction. In this way the planes between the crystals become more of a straight line, and under repeated stress or shock these lines will ultimately orient themselves to form a cleavage plane, resulting in breakage. With a casting the method of refining the grain is to subject it to heat treatment; that is, by alternately heating and cooling the casting the size of the grain is reduced until it is comparable to that in the rolled structure. The smaller crystals, however, retain their exact shape as true polyhedrons and the planes between them have not been oriented to form lines of weakness. This comparison applies more to the physical characteristics of the steel than to its corrosion resistance, but is important nevertheless.

When we come to the more complex, corrosion resisting alloys we have two added factors. In the first place certain elements, notably molybdenum, greatly increase the resistance of these steels to both over all and intergranular corrosion, but make them very difficult to handle in the rolling mill. In castings, however, these elements can be added in sufficient quantities to provide a factor of safety against corrosion, and actually make the castings easier to handle in the foundry.

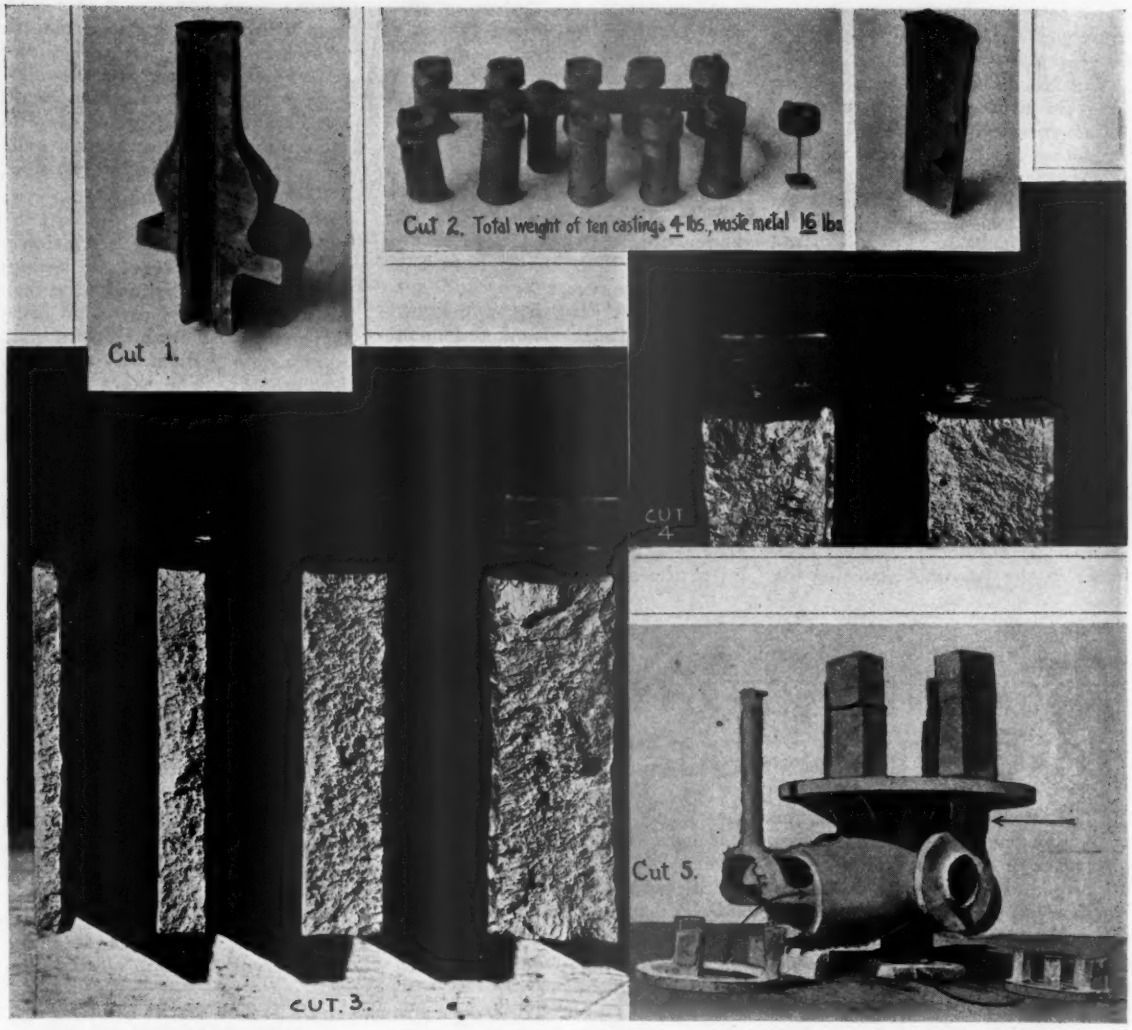
There is another factor which enters into consideration—or perhaps it would be truer to say another factor which always existed becomes of paramount importance,—this is the character of the amorphous layer or film which lies between the crystals of the steel. Without trying to go into the highly controversial subject of what this film is or how it behaves, we know that in stainless steels it is of the utmost importance. Intergranular corrosion is responsible for most unexpected failures in service and is in turn caused by the precipitation of carbides and impurities to the crystalline grain boundaries. Exactly how this occurs is not capable of proof but it is interesting that castings apparently offer greater resistance to corrosion than plate of the same analysis.

Experiments carried on with nitric and hydrofluoric acids at high temperature showed that a piece of stainless steel plate is attacked before a casting of the same analysis. Two possible explanations suggest themselves: First, the mechanical distortion of the plate due to rolling may in some way have lessened the corrosion resistance of this film, possibly through the distortion of the true polyhedron shapes of the original crystals. Second, and to my mind more probable, the thinner layer of this amorphous film in the rolled structure may make the precipitation of carbides more detrimental. To understand this, visualize a series of 1-ft. cubes cemented together by mortar. This would represent the ingot or casting structure. If these were broken into 64 3-inch cubes held together by the same amount of mortar you have obviously a much thinner layer of mortar between the cubes. This is exactly what happens when an ingot is rolled into a plate. This is highly theoretical, of course, but no question in metallurgy offers such an interesting field for speculation.

So far, the casting would seem to be the answer to any corrosion problem, but it is when we come to translate the theory of the laboratory into the finished casting that we encounter difficulties. In the first place, stainless steel shrinks $\frac{5}{16}$-inch per foot or 25% more than ordinary steel. In the second place, it requires a degree of perfection hitherto unknown in the foundry, and in

*Vice-President Electric Steel Foundry Company, Portland, Oregon.

Paper presented at the International Convention of TAPPI, Portland, Oregon, Sept. 10th to 13th, 1934.



the third place, its crystalline structure cannot be controlled by heat treatment as in a normal steel.

The first of these means that the danger of cracks and shrinkage cavities is multiplied. This necessitates great care in design to eliminate rapid changes of section and considerable skill in the foundry to obtain a uniform cooling and shrinkage of the casting. Also, in stainless steels, there is greater contraction in changing from the liquid to the solid state as well as a more pronounced tendency to "pipe", so that the percentage of gates and risers required is often more than double that of a similar casting in ordinary steel.

Cut No. 1 illustrates the amount of waste metal necessary to produce a sound valve plunger. The dotted line marks the top of the casting, but a heavy bulb of metal had to be placed over it to prevent the "pipe" from running into the casting itself.

Cut No. 2 shows a typical example of the proportion of castings to waste metal. The enlarged section of the riser shows why it is necessary to have such an amount of waste. The salvage value of the waste metal is only a fraction of its cost, so the effect on the price per pound of the casting can be appreciated.

It is not possible for anyone but a foundryman to realize the importance of perfect surface in a stainless steel casting, or how difficult it is to obtain. A minor defect, which would be unnoticed in an ordinary casting, is fatal in stainless steel. The sand mold into which the steel is poured offers every chance of such defect. The type of sand, the moisture content, the porosity and the method of molding, each contributes its hazard, and only experience and painstaking care will prevent severe losses.

Earlier in this paper mention was made of the fact that in a casting, the size of the crystals could be controlled by heat treatment. Unfortunately, in the stainless steels, which are austenitic, this is not the case. Reheating tends to enlarge rather than refine the grain, and the only control which can be exercised is through the pouring temperature. The colder the metal can be poured, the better the crystalline structure, but obviously this is influenced by the metal section and design. Many castings could be greatly improved if this fact were understood by the designer.

Cut No. 3 shows the crystalline structure of different sections of metal poured at the same temperature. The thinnest section, having cooled most rapidly, shows a dense, fine-grained structure, but the heavier the section the coarser the grain becomes until, in the thickest piece, it would undoubtedly fail in service. While this grain growth is readily

Continued on next page

Continued from page 25

apparent in the fracture it could not be seen in the casting itself.

Cut No. 4 shows the improvement in grain structure by pouring at a lower temperature, but this metal would be too cold to run properly in the thinner sections shown in No. 3. From this it can be seen what care must be exercised with every casting, particularly when heavy and light sections are joined in the same casting. Very intricate designs are poured successfully but they require an exceptional amount of skill and experience.

It is easier of course to point out difficulties than to offer remedies. Certainly the most important step is a closer contact between the designer of the casting and the manufacturer. We have all learned a great deal during the past two or three years and will undoubtedly progress even faster in the future. Many of the methods of practices of a few years ago are obsolete today, but it is only when a foundry has the complete confidence of its customers that the advances we have made can be utilized. As an example, it is today often possible in stainless steels to design intricate pieces as separate castings and weld them together, making a much cheaper and better unit than if it were cast in one piece. This would have been heresy three years ago, and even now requires very thorough knowledge of the mechanical and metallurgical problems, but it unquestionably offers the solution to many a tough problem of design.

Cut No. 5 shows a digester bottom fitting which was greatly improved by following this idea. Two of the flanges could not be fed properly through the casting itself so they were cast separately and welded to the main casting. The inner flanges were fed by a connecting riser drawing its metal from the main riser above. Note also the excessive height of the risers.

As a matter of fact a successful installation is often just as dependent on correct casting design as on the mechanical principles involved.

Perhaps the next most important step is a realization of the part that experience plays in the producion of successful stainless steel castings. Operators have learned that conclusive tests on the corrosion resistant qualities of stainless steels require a time element of years rather than months. They have seen parts that looked perfect for a long period later deteriorate rapidly. If a certain analysis and method of manufacture of stainless steel castings has been proved in actual practice operators should hesitate before requesting changes which have not stood the test of time.

CHIEF FORESTER PREDICTS GROWTH OF PULP INDUSTRY

"The further development of the pulp industry on the Pacific Coast offers one of the most promising, if not the most promising, means of increasing the utilization of our forests and the building up of permanent payrolls, based upon sustained yield forestry," said F. A. Silcox, chief forester of the United States Forest Service, upon a recent visit to the West Coast. "The Pacific Coast may expect a substantial pulp development in the not distant future. The 'signs' in Washington point that way. It is the only logical thing to expect.

Chief Forester F. A. Silcox Visited Pacific Coast

"Here, upon the Pacific Coast, there are tremendous supplies of pulping woods. Such woods attain commercial pulp mill sizes in a relatively short span of years. Thus the existing supplies will be rapidly supplemented by new growth. Timber, in the form of pulp wood, is the shortest rotation forest crop.

"On this trip I visited regions in the Lake States where the saw timber has largely been cut off. I visited communities, counties, that are bankrupt because the sawmills came with a boom and now they are gone.

"In Atlantic Coast states I have inspected regions where lumber production was stimulated all out of proportion to the reproductive capacity of the land. Today the federal government is called upon to feed hundreds of people in such areas because they have lost all chance of employment. In the Pacific Coast states I inspected communities which today are prosperous; in the not distant tomorrow the sawmill payrolls will be a thing of the past in some of these communities. What will become of the people? Where will they go?"

FERDIE SCHMITZ PROUD PAPA OF TWIN DAUGHTERS

Twin daughters, Patricia and Nancy, arrived at the Ferdinand Schmitz home in Shelton via the Swedish Hospital in Seattle, on August 16th. Mrs. Schmitz and the two girls are coming along fine, but the father is busy making room for the welcome additions to the family.

Ferdinand Schmitz is superintendent of the Rainier Pulp & Paper Company of Shelton, Washington.

FURTHER WASTE LIQUOR DISPOSAL PROGRAM

The Rainier Pulp & Paper Company of Shelton is adding to the original waste liquor disposal unit placed in operation earlier in the summer. Two large ovens and a brick stack will be built adjacent to the power plant. Piles have been driven and the work begun.

The additional stack will increase the capacity of the original unit by furnishing additional draft for the burning of the evaporated liquor to be burned in the new ovens. The first unit is being altered to secure greater efficiency.

SOUNDVIEW GETS MORE WATER

The water supply of the Soundview Pulp Company at Everett, Washington, will be increased by the digging of an eight inch well near the digester building. This is the second well to be dug on the company's property, the first being in regular operation.

NEW BRITISH COLUMBIA PROJECT

A sulphite mill for the production of pulp to be used in the manufacture of rayon and fine papers on the British Isles is regarded as a probable development in British Columbia during the next few months as a result of the present visit to the coast of R. O. Sweezey, prominent Montreal financier whose investment house has specialized in pulp and paper mill securities for several years.

Mr. Sweezey has been in Vancouver and in various paper mill areas for some time, and plans to remain another month so as to obtain all the information possible on the prospects of such a mill being operated successfully. He said that the British interests behind the enterprise have the alternative of building a mill in British Columbia or in Eastern Canada, and the readily accessible supply of pulpwood in B. C. is one big factor in favor of establishment on this coast.

"British mills are making a strong bid for the rayon business," said Mr. Sweezey. "The United States and Japan now lead the producers, but Britain has made rapid strides in recent years. One disadvantage has been that Britain has been forced to buy raw material in the world market, mostly from Scandinavian countries. Britain would prefer to buy within the British Empire, and the indications are that an increasingly large proportion of the pulp will go to British mills from Canada."

Executives of British Columbia pulp and paper mills say that if market conditions improve there should be ample justification for a rayon pulp mill on the coast. Japan has been buying rayon pulp from the Pacific Northwest for years.

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25 MILLION 2-POUND CARTONS

In purchasing 25 million 2-pound boxes of rice, the Surplus Relief Corporation is calling for more rice than ever before has been sold in cartons. Container manufacturers have been granted exemptions from the NRA code in order that they may fill the tremendous carton order. Besides the 2-pound boxes another container must be furnished to hold 24 of the two-pound boxes. Cartons are being employed to prevent resale as the warning against release can be displayed prominently on them.

CHEMISTS WORK TO INCREASE RATIO OF HEMLOCK

Powell River Company chemists are still working on a formula to increase the ratio of hemlock to spruce in the process of manufacturing newsprint. Until a few months ago this work was carried on at the laboratories of the University of British Columbia under the late Prof. T. Sadler, but now the experiments are carried on at the Powell River plant.

Except to say that progress is encouraging, officials of the company are reticent concerning the tests which, if completely successful, would revolutionize the newsprint industry on the Pacific coast.

The big advantage of utilizing a greater proportion of hemlock lies in the fact that the stands of spruce are becoming less each year owing to the heavy inroads made upon them in all forests of British Columbia that are readily accessible. Much of the first class spruce in regions close to tidewater has already been utilized and while there are extensive spruce stands in the central part of the province and in the Kootenay country, these are many miles by rail haul from the mills.

Hemlock, on the other hand, is to be found in almost inexhaustible volume in several coast sections. Present utilization of spruce and hemlock in newsprint production runs about 70 to 30. If this could be brought to 60 to 40 it would be more in conformity with the forest occurrence of the species, permitting the mills to make much more economical use of the pulpwood available.

Newsprint chemists in British Columbia are constantly working on experiments to improve the quality of the mills' product. In past years most of this work, apart from the spruce and hemlock experiments, has been devoted to improvement in the surface, strength and color of the paper. A comparison of British Columbia newsprint of several years ago with the present product affords a striking indication of the improvement that has been effected.

EXECUTIVES GO EAST

S. D. Brooks, president, and A. E. McMaster, general manager, Powell River Company, have left for Eastern Canada and the United States to study newsprint market conditions and the general status of eastern mills. They will be gone about a month.

EXTENSIVE POWER RESOURCES REVEALED IN OLYMPIA PENINSULA

Water power resources available for hydro-electric development on the Olympic Peninsula were brought out in the water resource survey partially completed by the United States Geological Survey cooperating with the state of Washington. Their findings to date were told at a meeting of the Water Resources Advisory Committee at Lake Quinault the middle of August.

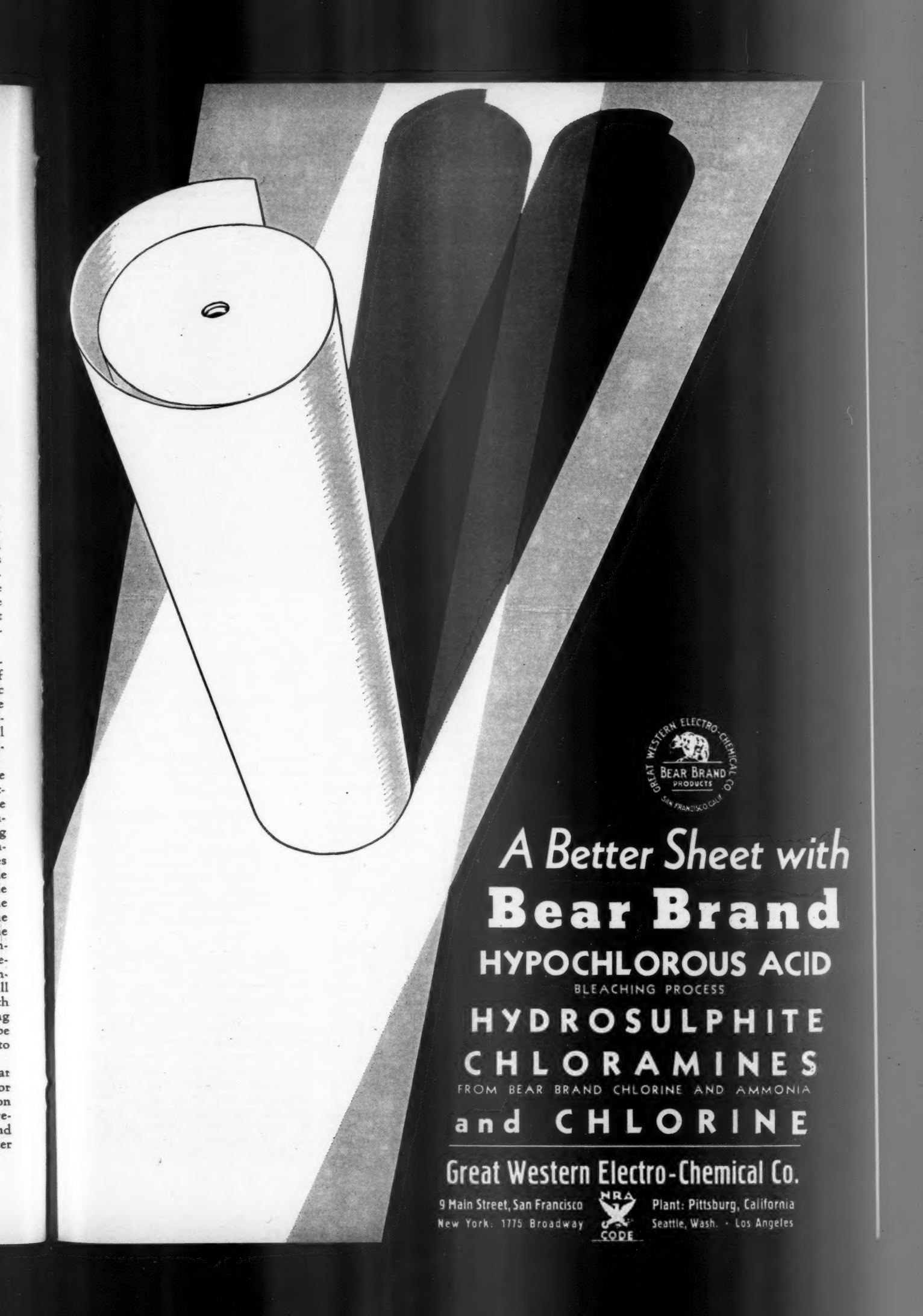
The thirteen streams on which the surveys have been completed have 1,354,600 acre-feet storage and would develop 387,730 horsepower 90 per cent of the time and 612,790 horsepower 50 per cent of the time.

Streams included are Skokomish, Lilliwaup, Hamma Hamma, Duckabush, Dosewallips, Quilcene, Dungeness, Elwha, Soleduck-Lyre, Ozette, Hoh, Quinault and Wynooche. The power potentialities of the Humptulips, East Fork of the Quinalt and the Satsop rivers are in the process of being determined and are not included in the above figures. The Queets and Clearwater rivers have been surveyed but the data has not been checked nor released for publication.

As this is the first time comprehensive surveys have been made of the power potentialities of Olympic Peninsula rivers, it is believed the amount of power available will impress those contemplating industrial development of the peninsula's timber and mineral resources.

G. L. Parker, chairman of the Water Resources Advisory Committee, explained the purposes of the committee and of the State Planning council, which is endeavoring to obtain complete and accurate information on the natural resources of the state of Washington to guide future industrial development. The Planning Council will review the water resources not alone from the point of power, but also from the viewpoint of the fisheries, both commercial and sport, and the perpetuation of our forests and the control of floods. Stream pollution will be studied from every angle, with the one though in mind of bringing forth all the facts that they may be examined to determine the action to take.

At the committee meeting Oscar Whalgren of Forks spoke in favor of pulp and paper development on the Olympic Peninsula as being related to the water power survey, and he urged development of the power possibilities of the Hoh river.


GREAT WESTERN ELECTRO-CHEMICAL CO.
BEAR BRAND
PRODUCTS
SAN FRANCISCO CALIF.
A Better Sheet with
Bear Brand
HYPOCHLOROUS ACID
BLEACHING PROCESS
HYDROSULPHITE
CHLORAMINES
FROM BEAR BRAND CHLORINE AND AMMONIA
and CHLORINE
Great Western Electro-Chemical Co.
9 Main Street, San Francisco
New York: 1775 Broadway
NRA
CODE
Plant: Pittsburg, California
Seattle, Wash. · Los Angeles

EXPECT NEWSPRINT PRICE RISE

British Columbia newsprint executives expect that increasing costs will soon result in a rise in price for their product. Indications are that the increase will take effect some time in October when most mills reopen their contracts with publishers, but so far no definite information is available. The feeling among newsprint manufacturers for several months has been that the price of newsprint is out of line with prevailing tendencies and a jump of about $5 a ton is inevitable. A greater increase would be justified by the increasing costs of production, but it is believed that publishers would strongly oppose it. Newsprint manufacturers will probably have to be content with taking a step at a time in the adjustment of prices after a long period of depressed values.

"I believe that the publishers will take a broad-minded and sympathetic view of the situation," said A. E. McMaster, general manager of Powell River Company, biggest newsprint producer on the coast. "Unquestionably they realize that the present conditions cannot continue much longer. Mills have been producing newsprint for months at a cost absolutely unwarranted by general conditions. Indefinite continuation of such a situation would be disastrous to the mills, and I am sure that the publishers are fair enough to realize that. They know very well the serious consequences of a collapse of the newsprint industry, and I believe the day is coming when the publishers and the newsprint manufacturers will go along together towards stability, advancing step by step in accordance with the general improvement in economic conditions."

Lack of co-operation among newsprint producers has made it impossible in the past to secure united action in placing newsprint prices on a higher basis. Since the establishment of the newsprint code authority in the United States and the organization of an allied association in Canada known as Nemac (Newsprint Export Manufacturers Association of Canada) the producers have managed to hold prices to a common level.

All British Columbia mills are operating at 100 per cent capacity. Eastern Canadian mills do not approach that figure, but they are in a much better position than they were a few months ago, and the general average is now about 70 per cent. Volume of tonnage is no longer the principal problem of the manufacturer. Demand has improved to such an extent that production is now up to 1929 levels. But the net return per ton is so low that the advantage of the additional tonnage is minimized. Last year Canadian producers were receiving a substantial premium on American funds when converted into Canadian dollars. This amounted to as much as $5 a ton early this year. But exchange rates have been reversed since then, and the premium of $5 a ton has been converted into a discount of $1. Vagaries of exchange have thus brought about a loss of about $6 a ton in the sale of Canadian newsprint to the United States. Increased tonnage has resulted in decreased operating cost, but not to an extent sufficient to offset the loss. Woods and mill costs are higher, wages have been increased, and in Eastern Canada a shortage of pulpwood in certain sections has provided an additional burden for the mills.

FRUIT WRAP TRADE GOOD

Sales to date, plus the heavier pack of high grade pears and apples, indicates a considerable expansion in the trade for apple and pear wraps this year as compared to 1933. This year there was a slightly heavier order volume of copper wraps for pears, indicating that more of the growers are using this as a preventative. The fruit so far this year has shown little signs of rot, though it is anticipated that the usual copper wrap spot demand will arise when rot does begin to make itself evident. Manufacture of the copper pear wrap has made steady progress from the time when the chemical preparations was placed upon the paper until last year when the chemical was mixed in the beaters, largely as an experiment, to this year when the general practice is to mix in the beaters.

Apple growers in some districts are using a slightly heavier wrap. Government regulations respecting washing to remove spray are being drawn tighter and tighter, with the result that growers are using more water in the wash and leaving a little more moisture on the fruit. The heavier wrap absorbs this added moisture in a little better shape.

VISITS COAST

Jack F. Patton, sales manager of St. Lawrence Paper Mills, Montreal, has returned east after visiting British Columbia paper mills.

POWELL RIVER BUYS NEW EQUIPMENT

Powell River Company, proceeding with its plans for improvement of production at its big British Columbia mill, has placed orders with Oliver United Filter Company for filters; with Watrous Company for grinders; Chemipulp Process, Inc., for five systems, and Canadian General Electric Company for motors and transmission equipment. All these companies operate in Eastern Canada and manufacturing of the ordered units has already commenced. It is expected that the new equipment will be in operation about the first of Decembr.

Officials of Powell River Company reiterated that the development program now under way will have no effect on volume of production, and they denied any intention of installing another paper machine at this time. A. E. McMaster, general manager, told Pacific Pulp and Paper Industry that until market conditions had become more stabilized and prices higher the company would not even consider such a step.

The sole objective of the present program is to improve the quality of the Powell River product. The market is now so keenly competitive that the business goes only to those companies able to deliver a superior article, and Powell River Company intends to maintain the high place it has already won. The new equipment will take more power than was formerly utilized, as all units are operated with individual motor drive, with no line belts.

NEW PULPWOOD TRUCKING RATES

The Department of Public Works of the state of Washington has issued an order effective September 4th establishing temporary minimum rates for the hauling of pulpwood. These rates supercede those ordered on July 24th.

The new minimum rates on pulpwood when loaded from landings for delivery at one delivery point are, fifty cents (.50) per cord for one mile or fraction thereof, seven and one-half cents (.07½) for each additional mile or fraction thereof. For movements other than as outlined above fuel wood rates apply.

The new minimum rates for fuel wood are, one dollar ($1.00) per cord for one mile or fraction thereof, seven and one-half cents (.07½) for each additional mile or fraction thereof.

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TACOMA PLANT

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Sales Office
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HOOKER ELECTROCHEMICAL COMPANY

TACOMA, WASHINGTON

SIX MONTHS PULP IMPORTS SHOW BIG INCREASE OVER 1933

Expansion of American Pulp Industry Needed To Provide Permanent Employment

While the unemployment in this country is but slightly improved over 1933, taking the nation as a whole, imports of wood pulp continue to show a very significant increase.

In the six months of 1934 ending June 30th the imports of chemical wood pulp increased 22.5% over similar imports in 1933.

Groundwood imports in the same period increased 15.7%.

Although the United States is the greatest timber country in the world and is fully capable of being self-sustaining in wood pulp production, we continue to import an increasing percentage of the total wood pulp we consume.

In 1933 the United States imported 43.7% of all the sulphite pulp it consumed.

Why?

With increasing frequency the question is heard among the ever widening circle of those familiar with the paradox of our large timber holdings and small wood pulp production, "Why don't we reduce American unemployment by expanding our own production of wood pulp?"

At the moment the answer is, "Because our government has not encouraged development of our timber resources as do the governments of Canada, Sweden and Finland, the greatest of pulp producing nations." Private capital fears going ahead by reason of past lack of governmental protection in times of depression.

The American wood pulp industry has been retarded in its development for many years by the unscientific governmental policy of so-called "timber conservation," which was interpreted as meaning the locking up of our national forests from commercial utilization to save them for the future when there were to be no private forest lands.

But timber does not save. It grows to maturity and then goes into decay. It must be harvested when ripe as is done with wheat. No one would think of leaving a wheat crop standing to "save for the future". The only difference betwen wheat and timber is the longer growing cycle of the latter. Both must be utilized or their value declines. The Federal Forest Service has realized this fact for many years but has found itself bucking a stone wall of opinion or rather of ignorance that the true way to "save the forests" was to utilize them upon an intelligent self-sustaining basis.

True Conservation

In his paper, "The Pulpwood Forests of Oregon and Washington," presented at the International TAPPI Convention this month in Portland, Thornton T. Munger, director of the Pacific Northwest Forest Experiment Station, hit at this fallacious theory of "locking up the forests for the future."

"It appears," said Mr. Munger, "that the large area of virgin timber is stagnant in growth . . . but that the several million acres of immature forest are putting on a volume of wood equivalent to about one billion cubic feet a year. However, it is expected that within 20 or 25 years, with the conversion of stagnant virgin stands into young growing stands . . . the actual growth for this region will have stepped up to about 1¼ billion cubic feet a year."

Fortunately the nation generally and government circles in particular are beginning to recognize that forests are a renewable resource, and that the natural method of forest utilization is the cutting of no longer growing, mature trees, and the encouragement of the younger, immature rapidly growing trees.

But with realization that this country should operate its forests upon a "sustained-yield" basis comes the question of what are we going to do with the timber that is mature and ready for cutting, The talk is heard that we have enough lumber; that lumber consumption has steadily declined for many years and we will continue to consume less and less of our available timber for substitute building materials are being developed to a high degree and for many purposes are more satisfactory.

New Timber Market

The answer is use this mature timber for pulp and its allied product, cellulose. Cellulose is broadening its use in industry. Each year larger quantities of wood cellulose are being employed in making rayon, cellophane, lacquers, plastics and artificial leather. The sale of these products is expanding yearly and by turning our timber into material for use in these industries we can give commercial value to our forests —value far beyond that ever given by the lumber industry.

More Employment

We can, too, give more employment to our people in building more pulp mills for producing either pulp or pure cellulose; in operating the plants over a long term of years; in the purchase of machinery and supplies needed for running the mills; and, the cutting of timber—the raw material.

U. S. PULP IMPORTS FIRST SIX MONTHS—1934

Month—	—Long Tons— Chemical Pulp	Ground Wood
January, 1934	124,911	13,137
February	128,708	10,186
March	97,694	8,249
April	68,884	12,717
May	112,041	15,674
June	122.274	9,867
Total	654,512	69,830
Monthly average, 1934	109,085	11,638
Total for same period of 1933	534,055	60,343
Monthly average, 1933	89,009	10,057

Percentage Increase 1934 Imports Over 1933 First Six Months

Chemical Pulp	22.5%
Groundwood	15.7%

Yet we do nothing about this situation but decry its existence. Private initiative began to do something about it when the construction of pulp mills really began in 1927 on the Pacific Coast and, but for the depression, would have built up a pulp industry capable of supplying a greater proportion of the United States' own requirements.

Now governmental policies, creating an attitude of uncertainty among the possessors of sufficient capital to build and operate pulp mills, prevent for the time being the badly needed construction of additional pulp mills to utilize our timber and to give employment to a greater number of our people.

Opportunity Exists

A little figuring will bring out that on the basis of 1933 imports of bleached and unbleached sulphite pulp twenty-three sulphite pulp mills, each of 150 tons daily capacity would be necessary to supplant all imports. These figures show the size of the opportunity existing to create more employment in this country and at the same time give a commercial value to our forests.

There are signs that the federal government may go as far as to assist in financing the construction of new pulp mills where the operations are tied up with timber ownership sufficient to make the pulp mill self-sustaining if intelligent forest management is applied. However, there are only a few in governmental circles who appear to be aware of the need for federal encouragement of the industry which will mean so much in augmenting our national income, and there is much opposition on the part of those who profit by the importation of foreign pulp.

Even if the Federal Government does actually become a partner in the constructing of pulp mills it should also immediately encourage private capital to build, as the need for more employment of a permanent nature and the need for greater commercial value for our timber, is becoming more pressing every day.

FOREST DIVISION ATTACKS PLANNING PROBLEM

Extreme timeliness of the surveys in forest economics, sociology, and protection, to be completed by nine subcommittees of the Forestry Division of the Oregon planning council, was stressed by Chairman C. J. Buck at the first meeting of the division held in Portland late in July.

The importance of a careful forest planning program including a partial answer to the complex national problems of sustained forest yield, land use, flood control, wild life preservation, social and cultural values of the forest, and the fact that this northwest region enjoys a particularly strategic position in the national attack upon these problems at the present time, was emphasized. Renewed interest in a program of sustained forest yield has been awakened recently by meetings of industries under the lumber code at Washington. The use of a vast fund of information available in these surveys for approach to scientific management of forest resources, and the practical possibility of coordinating such scientific management with local lumber industries, makes this region a strategic point of attack at a logical time.

Subcommittee chairman and others present at the meeting in the Forest Service headquarters, included C. J. Buck, Dr. Norman F. Coleman, C. C. Coleman, W. L. Finley, B. E. Hoffman, E. B. Tanner, E. B. Lodewick, Prof. Earl G. Mason, T. T. Munger, Theo. Rainwater, Edward Stamm, F. S. Scritsmier, V. B. Stanbery, A. R. Watzek.

The Oregon Planning Council is part of the national planning organiztaion, set up at the suggestion of the President. The Oregon council is one of four state councils under the regional planning commission, comprising the states of Oregon, Washington, Montana and Idaho. Of this regional commission, Marshall N. Dana is chairman. Prof. Philip A. Parsons heads the Oregon council. Subcommittee reports under this council's program are to be completed within a few months for more intensive consideration, possibly involving recommendations to congress or state legislatures for appropriations to cover further investigations.

The committee under the forestry division of the Oregon Planning Council, with their chairman, are:

Forest management—A. R. Watzek.

Fire protection, insects & disease —E. B. Tanner.

Forest products & lumber production—J. E. Lodewick.

Public acquisition—F. S. Scritsmier.

Watershed and erosion—Prof. Earl G. Mason.

Public responsibilities—Lynn F. Cronemiller.

Wild life—W. L. Finley.

Research—T. T. Munger.

Cultural and social values—Dr. Norman F. Coleman.

V. B. Stanbery, state planning consultant, is devoting full time to the organization and functioning of the planning commission.

A SCOTCH VACATIONIST

Earl Thompson, well known representative of the Great Western Electrochemical Company, recently spent his vacation with Mrs. Thompson on a dude ranch in Northern British Columbia some 200 miles north of the border.

Upon his return the story leaked out that Earl had tried to beat the high price of gas in British Columbia by buying just one tankful and stretching that out until he reached the border by almost constant freewheeling.

But Earl admits with a blush that he didn't quite make it. The gas supply ran out between the Canadian and American Customs Houses and the officers had to help push the car over the line.

JULY NEWSPRINT STATISTICS

Production in Canada during July, 1934, amounted to 208,238 tons and shipments to 199,926 tons, according to the News Print Service Bureau. Production in the United States was 76,184 tons and shipments 70,133 tons, making a total United States and Canadian news print production of 284,422 tons and shipments of 270,059 tons. During July 27,298 tons of news print were made in Newfoundland and 2,047 tons in Mexico, so that the total North American production for the month amounted to 313,767 tons.

The Canadian mills produced 395,961 tons more in the first seven months of 1934 than in the first seven months of 1933, which was an increase of 37 percent. The output in the United States was 32,334 tons or 6 percent more than for the first seven months of 1933, in Newfoundland 37,914 tons or 26 percent more, and in Mexico 1,917 tons more, making a net increase of 468,126 tons, or 26.5 percent.

Stocks of news print paper at Canadian mills are figured at 55,099 tons at the end of July and at United States mills 30,174 tons, making a combined total of 85,273 tons compared with 70,910 tons on June 30, 1934.

PIONEER-FLINTKOTE ADDS NEW BOARD LINES

BLAKE, MOFFITT & TOWNE TO DISTRIBUTE PRODUCTS

With the completion of an extensive modernization program, costing $500,000, the Pioneer-Flintkote Co. of Los Angeles has brought into production a new board mill to serve Pacific Coast box makers and board users.

The company, formerly known as the Pioneer Paper Co., has made board for some years, but now is going into more varied lines with the completely remodeled plant. Their line now consists of chip board and box board, including bleached and manila lined, solid news, white patent coated, mist grays and mist tans, pasted boards, lined board and test liner.

The improvements have been carried out over the past six months, and include the erection of new buildings housing the board machine, beaters and other equipment, two new warehouses, a complete new technical control laboratory, a new high pressure boiler plant, etc. Through the extension of their activities, 50 more men have been added to the payroll, bringing the total up to more than 300.

The board machine is a Black-Clawson 5-cylinder, 112 inches wide, with three stacks of calenders, and is served by 13 Dilts beaters. The machine room is exceptionally light and clean. Production averages about 65 tons per day, the tonnage of course varying somewhat on different boards.

The new warehouses adjoin the machine room, one being a two-story structure with 15,000 square feet of floor space, and equipped with an overhead bridge crane for handling rolls. The second warehouse is a one-story brick building with 10,000 square feet of storage space, and is just being completed.

The company operates no box making plant of its own, and the only converting equipment is the paper cutters, and a new lining machine.

There are five boilers in the boiler room, one of which has just been added as part of the improvement plan, the new one being a 300 h.p. unit. The fuel used is either oil or natural gas. Draft is provided by a new steel stack, 150 feet high, 6 feet in diameter.

Water for the mill is provided by two wells, both located on the company's 20-acre property. One of these deep wells was drilled this year and now brings in 1,000,000 gallons per day.

Activities of the boxboard division of the company are in charge of A. E. Carlson, manager, with Walter H. Cady as production manager. J. D. Beatty is paper mill superintendent, and M. E. Campbell is in charge of the laboratory as chief chemist.

Officers of the company are Willis G. Hunt, president; H. M. Eichelberger, vice-president, and L. M. Simpson, vice-president and general manager.

Blake, Moffitt & Towne, operating a coastwide chain of paper distributing houses, has been appointed selling agents for Pioneer-Flintkote board, it was recently announced. This provides a strong manufacturing and distributing combination that will assure Pacific Coast box makers of a large source of supply, and prompt service.

Continued on next page

Air View of the Enlarged Board Mill of the Pioneer-Flintkote Company of Los Angeles

Continued from page 35

Regarding the entry of the Pioneer-Flintkote Co. into the board manufacturing field, L. M. Simpson, vice-president and general manager of the company with headquarters in Los Angeles, had the following to say:

"We arrived at our decision to enter the board manufacturing field after having made a very careful analysis of the Pacific Coast market. The result of our survey indicated that the growth and development of this section warranted the establishment of a modern and well equipped board plant and it has been most gratifying to note the very cordial and favorable response our announcement has received from the trade. It indicates that the box manufacturers are much interested in the facilities which such a plant has to offer."

A. E. CARLSON
Manager Box Board Division

Continuing, Mr. Simpson said, regarding the mill's sales policy:

"The operation of the mill will be confined to the manufacture of board, for ours is strictly a board plant—we will do no converting. Our complete line will include plain chip, manila lined, bleached manila, white patent coated, mist-grey, mist-tan, and all types of sheet lined and pasted boards, will be distributed through the facilities of Blake, Moffitt & Towne, who have been appointed selling agents. We are looking forward to the opportunity of serving our friends and customers as for many years Pioneer has been recognized for its knowledge and experience in the merchandising of paper and paper products, and its enviable reputation throughout the trade."

FIR-TEX AGAIN OPERATING

The plant of the Fir-Tex Insulating Board Company at St. Helens, Oregon resumed operations August 22nd after having been shut down since April 1st. The opening was delayed for about a month due to lack of raw material, waste wood from the Columbia River sawmills. Due to the longshoremen's strike many sawmills were shut down and did not produce any waste wood, but with the resumption of sawmill operations, Fir-Tex is again assured of a satisfactory supply of raw material.

During the shut down the warehouse stock of Fir-Tex board has been depleted almost to the vanishing point. On the basis of current orders the mill is expected to operate three shifts a day four days a week for several months at least. Personnel is the same as before the shut-down.

R. N. Simeral, general manager is hopeful that the federal housing law will prove beneficial through the creation of a larger market for wall board in remodelling and repairing homes.

Early in September the new chipping plant will be ready for production and will enable Fir-Tex to produce a lighter colored board free from the coloring effect of bark.

DR. HENRY VISITS COAST

Dr. F. R. Henry, general sales manager of the Simonds-Worden-White Company of Dayton, Ohio, makers of paper and chipper knives, beater bars and grinding wheels, came to the Pacific Coast several weeks ahead of the TAPPI convention to call on the mills with his Northwest representative, John E. Hassler of Portland.

While on the Coast Dr. Henry will confer with George Meddis of San Francisco, Northern California representative of Simonds-Worden-White.

BONNEVILLE STUDY PROGRESSING

The feasibility of a pulp and paper mill development as a consumer of power from the Bonneville Dam is progressing under the direction of the Oregon Bonneville Commission with headquarters in Portland.

Data is being assembled on available wood supplies, markets, plant sites and methods of transporting the wood to any designated plant site. The initial steps consist of the gathering of the data and a later study will be undertaken in order to study the presentation and sale of prospective consumers.

THE PULP BUYER BEWARE

The August 15th issue of the Swedish Wood Pulp Journal comments on the American pulp market as follows:

"As regards the American market the interest is concentrated on the question of the future of the dollar. The endeavors to bring about a further inflation have not as yet been victorious, but it is considered rather likely that Mr. Roosevelt will avail himself of his right to reduce the gold value of the dollar from the present 60 per cent to the limit of 50 per cent of the earlier value. However, it is not expected that this will be done until Congress meets. His recent action for a nationalization of the silver resources is considered to be of a nature to oblige the inflationists temporarily and at the same time keep the question of the dollar value open. If things develop towards a further depreciation of the dollar, it will be of great importance to watch the counter actions of other countries, especially England.

"The fall of the dollar in 1933 caused a general increase of prices in the United States, and the American pulp buyers, who anticipated the advance, hurried to cover their needs for a good time ahead, to a large part on the basis of the previously ruling low dollar prices. How the buyers will act this time in case of an inflation is not easy to foretell, but in any case it is likely that the sellers will know better how to guard themselves against losses on the exchange."

CONSUMPTION OF PAPER RISING ABOVE LAST YEAR'S SHOWING

According to Dun & Bradstreet encouraging reports relating to conditions in the paper industry are becoming more general in practically all divisions. Code regulations, which were instrumental in stabilizing prices, greater interest in advertising programs, and the many new uses of paper in commerce and industry have been factors contributing to recovery movements in this industry.

Consumption of paper is running steadily ahead of last year's, newspaper advertising lineage for the first six months being up 16.7 per cent from the 1933 total, while magazine advertising lineage rose nearly 30 per cent, and wrapping, book, and writing papers were used in quantities from 5 to 20 per cent larger. Most of the manufacturers reported that output increased from the close of 1933 to the end of the first quarter, but that a recession started in May which reached its low for the year in July. Since that time, schedules have been widened in some divisions.

In spite of the recession in July, wholesale distribution of paper and paper specialties ranged from 20 to 30 per cent larger than for the comparative seven months of 1933. While consumption is upward, and prices for all grades, with the exception of newsprint, have risen from their lows of the early part of 1933, production costs also have increased, which may affect the profit possibilities of the leading companies. Thus far this year, however,, the losses of 1933 have been halved by some of the most important producing units, while many of the small producers have shifted balances to the right side of the ledger for the first time in four years.

Production Rate Steady

Since the middle of the second quarter, the comparison of production with that for the corresponding months of 1933 makes a less satisfactory showing, as at that time the rush to build inventories carried output 25 to 35 per cent ahead of 1932, and in some divisions the widest schedules in several years were reached. In the tissue division, production both in value and units still is ahead of that of last year, even though there was a decided spurt in sales in July, 1933, due to the anticipated advances in prices, as a result of the NRA.

Output of newsprint in the United States and Canada for the first six months of 1934 was the highest for any six months' period since 1930. The production for both countries reached 1,759,118 tons, compared with 1,350,989 tons in 1933, a gain of 408,129 tons, or 30.2 per cent. While this exceeded the output for the first half of both 1932 and 1931 it fell below the total of 1,970,449 tons in the comparative period of 1930.

Canadian mills in June produced more newsprint than in any June of recent years, topping even the high points of 1929 and 1930. A total of 229,637 tons was produced, compared with 171,419 tons in 1933, an increase of 58,218 tons, or 33.9 per cent. In June, 1929, production was only 225,055 tons.

Demand Again Broadening

During the first quarter of the year, most of the wholesalers reported heavy increases in orders, the average being about 35 to 50 per cent above that of 1933. Since April, however, there has been a gradual decrease, with the result that the general average increase for the first seven months has been reduced to 20 to 25 per cent. In some of the individual items, the gain has been larger, as printing paper sales were around 30 per cent higher than a year ago, while wrapping paper went into consumption in quantities about 45 per cent larger.

The truckmen's strike in some cities of the Northwest and the tie-up of shipping on the Pacific Coast for nearly three months reduced sales temporarily in those districts. In the Southwest, where the drought has passed its fourth month, sales have been on the decline since the latter part of June. The losses in these sections, however, have been counter-balanced by the gains in other parts of the country, as in many centers of the South sales have averaged 50 per cent larger than those during the corresponding seven months of 1933.

The recession reported in orders during July has been checked, and demand is beginning to widen for nearly all grades and classes of paper. More orders have been received for wrapping paper since the heat wave broke, while the call for specialties for resort and roadside stand purposes was the largest in several summers; in some items, sales were double last year's.

Shipments of fruit wrappers to orchardists in the Pacific Coast territory increased 20 to 25 per cent, but many of the orders booked last spring in the Middle West were cancelled because of the drought devastation. New uses for paper products have resulted in increased sales, especially among distributors of wax wrappers for bread and waterproof protection for fabric containers.

Price Level Holding

There has been little change in prices since the adjustment made earlier in the year, the level holding steady at 10 to 35 per cent higher than a year ago. On most grades of book and writing papers, prices are higher by 20 to 30 per cent, while on kraft and wrapping papers the average is up 20 to 25 per cent. The price of newsprint continues at $40 a ton, at which figure it has remained constant since April, 1933, when it was reduced from $45. Fortunately, the practice of dumping paper on the market regardless of price, which prevailed for so many years, has been almost entirely discontinued.

In almost all divisions of the trade collections have surpassed the status of 1933 by a substantial margin, and there has been considerable thawing out of frozen accounts since the early part of June. The slowness which has developed of late in some of the country districts is not regarded as an unfavorable feature, as this usually occurs immediately preceding the fall crop harvest.

Failure Downtrend Continued

The curtailment of bankruptcies during the third and fourth quarters of 1933 has been continued thus far in the current year; and, based on the diminished returns for the first seven months, the 1934 totals for both number of defaults and liabilities promise to be the smallest recorded since 1931. From January to July, inclusive, only 4 failures were reported for paper manufacturers, while in the distributive divisions the total was 12, with the monetary loss $664,517 and $198,326, respectively.

This continues the favorable showing of 1933, when the number of failures for the entire industry fell to 26 from 44 in 1932, a decline of 40.9 per cent, while the involved liabilities were reduced to $1,944,189 from the record high of $2,613,450 in 1932, a decline of 32.4 per cent.

Concluded on next page

Continued from page 38

The complete insolvency record of the paper industry since 1927, including the seven months of 1934, as compiled by Dun & Bradstreet, Inc., shows:

Paper Manufacturers

Year	Number	Liabilities
1927	5	$2,017,000
1928	5	816,900
1929	10	1,929,200
1930	3	821,226
1931	1	800,000
1932	9	2,613,450
1933	10	1,944,189
1934*	4	664,317

Paper Wholesalers and Retailers

Year	Number	Liabilities
1927	19	$1,128,800
1928	20	495,707
1929	7	67,592
1930	14	210,300
1931	6	192,100
1932	35	1,034,347
1933	16	520,760
1934*	12	198,326

(*) January to July, inclusive.

BUSINESS PROFITS INCREASE

The August letter of the National City Bank of New York throws light on the comparative net profits of 250 corporations for the first six months of 1934 as against the same period of 1933.

These 250 corporations made a net of $276,563,000 during the first six months of 1934 compared with $86,362,000 in the same period of 1933. Of this group 23% reported deficits in the first half of 1934, while 44% reported deficits in the first half of 1933.

Six months net profits of 201 of this group of 250 corporations, which had deficits totaling $19,038,000 for the first quarter of 1933, amounted to $242,268,000 in 1934 as against $65,650,000 for the first six months of 1933.

The combined net profits of six paper products companies amounted to $2,690,000 in the first half of this year as compared with $847,000 for the first half of 1933.

HEADS RED CROSS CAMPAIGN

C. E. Ridgeway of the Soundview Pulp Company, Everett, Washington, has accepted the chairmanship of the annual Red Cross Roll Call Committee for Snohomish and Island counties.

Mr. Ridgeway has been most active in civic affairs in Everett. He was president of the Everett Chamber of Commerce during 1933.

VOTES DIVIDEND

The Crown Wllamette Paper Co. on August 14th declared a dividend of $1 a share on first preferred stock, payable Oct. 1 to stockholders of record Sept. 13.

The following officers were re-elected at the annual meeting of stockholders: president, Louis Bloch; executive vice-presidents, A. B. Martin and J. D. Zellerbach; vice-president and treasurer, Thomas McLaren; vice-presidents, George P. Berkey, D. C. Denman, A. B. Lowenstein and R. A. McDonald; secretary, D. J. Goldsmith.

PLANS USE OF WASTE LIQUOR

The street committee of the Aberdeen City Council is considering the installation of a large tank at the pulp mill of the Grays Harbor Pulp & Paper Company for the storage of sulphite liquor to be used in laying dust.

R. B. WOLF BUYS HOME

Robert B. Wolf, manager Pulp Division, Weyerhaeuser Timber Company, Longview, Washington, recently purchased a large home on Kessler Boulevard in Longview. The property consists of three lots, completely landscaped and facing on Lake Sacajawea.

PAUL M. FOSTER CHANGES

The Williams-Gray Company, sellers of paper and pulp mill supplies, 221 North LaSalle Street, Chicago, announce that Paul M. Foster will become associated with their organization September 1st.

Mr. Foster has been connected with the Beloit Iron Works and the Albany Felt Company. He is leaving the latter concern to join the Williams-Gray Company.

COMMERCIAL TIMBER IDENTIFICATION

"Identification of the Commercial Timbers of the United States" is the ttile of one of the American Forestry Series books just off the McGraw-Hill Book Co. press. The authors are Harry P. Brown and Alexis J. Panshin. It is designed to enable the reader to identify the commercial timbers of North America by characteristics visible to the naked eye and with the hand lens; also by minutes characteristics as revealed by the microscope. The book is adequately illustrated. It sells for $3, post paid.

CARL GAISER VACATIONS

Carl F. Gaiser, purchasing agent of the Crown-Willamette Paper Company in Portland, spent the first half of August vacationing in Iowa, his home state, sampling some of the hot weather he has been reading about.

DISCRIMINATION AGAINST COAST MILLS BLOCKED

The Interstate Commerce Commission suspended early in August railroad rate reductions of 4½ cents per 100 pounds on imported pulp hauled from the Atlantic seaboard into the Miami Valley, as a result of protests by West Coast pulp producers and paper mills in the Miami Valley.

The suspension will last until February 12th, 1935, and in the meantime on September 6th a public hearing will be held in Washington before the Commission. Pacific Coast pulp producers will be present and will be joined in their protest against the discriminatory reduction in rail rates by the paper mills of the Miami Valley and the Hamilton and Cincinnati, Ohio, Chambers of Commerce, and the Middletown, Ohio, Civic Association.

West Coast producers allege that the new rates would discriminate against them for Pacific Coast pulp is not classed as imported pulp and the proposed rail rate reductions was so worded as to apply only to imported pulp.

The railroads proposed the rate reduction to compete with water transportation up the Mississippi and Ohio rivers into the Miami Valley which at the present time costs less than rail charges from the Atlantic seaboard to the same interior points.

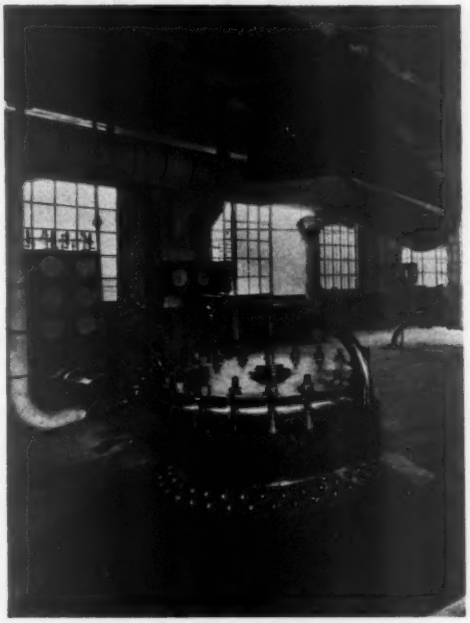
The Miami Valley paper mills want the rate reduction to apply to West Coast pulp as well as to imported pulp so that both will be on an equal basis.

PURCHASING AGENTS SEE PULP MILL

Accepting the invitation of the British Columbia Pulp & Paper Company to visit its Woodfibre mill, a number of members of the Purchasing Agents Association of British Columbia recently journeyed by boat from Vancouver to Woodfibre.

After luncheon in the company's dining hall the group inspected the sulphite pulp mill under the guidance of R. P. Brennan, resident manager, who was assisted by O. E. Bolger and S. Briggs.

Corrosive acids no longer eat up profits



No longer need costly pulp and paper manufacturing equipment be subject to continual shut-downs and replacements due to acid corrosion. Plant operators are specifying

STAINLESS STEEL

for blow-pit drainers, circulating lines, digester blow lines, heaters, screens, acid recovery systems, etc., knowing that Stainless Steel will withstand the highly corrosive effect of sulphite cooking liquor. The investment in Stainless Steel is profitable because the installation lasts many years, resulting in a low per annum cost.

USS STAINLESS STEELS

and Acid Resisting Alloy Steels are available in a wide range of chemical analyses in the form of Sheets, Strip, Pipe, Bars, Light Plates, Wire Products, Tubular Goods, etc.

The Research Laboratories of the United States Steel Corporation are available in the solution of your manufacturing problems involving the use of metal products. Our engineering and metallurgical staff, upon close study, will recommend a grade adapted to your particular need.

COLUMBIA STEEL COMPANY (US STEEL)

Pacific Coast Distributors for
AMERICAN BRIDGE CO.
AMERICAN SHEET & TIN PLATE CO.
AMERICAN STEEL & WIRE CO.
CARNEGIE STEEL CO.
ILLINOIS STEEL CO.
LORAIN STEEL CO.
NATIONAL TUBE CO.
TENNESSEE COAL, IRON & R. R. CO.

Subsidiary of United States Steel Corporation

SAN FRANCISCO · LOS ANGELES · PORTLAND · SEATTLE · SALT LAKE CITY
MILLS AT SAN FRANCISCO, TORRANCE AND PITTSBURG, CALIFORNIA

COLUMBIA
CAN FILL EVERY STEEL NEED

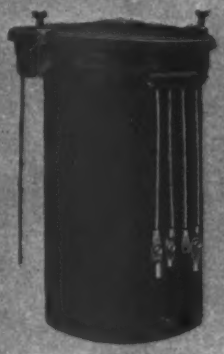
The Columbia Steel Company manufactures in its Pacific Coast mills:

- Black Sheets
- Galvanized Sheets
- Tin Plate
- American Wire Rope
- Zinc Insulated American Fence
- Barbed Wire—Tie Wire
- Wires of All Kinds
- Nails and Staples
- Bars and Shapes
- Castings

Columbia Steel Company also supplies:

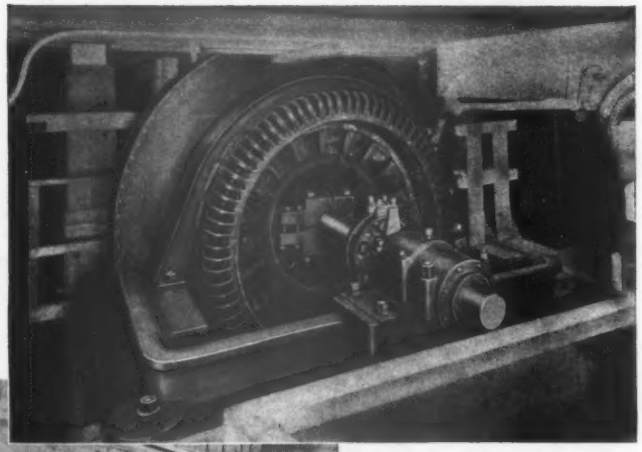
- Structural Shapes
- Plates
- Pipe and Tubing
- Rails and Accessories
- Electrical Wires and Cables

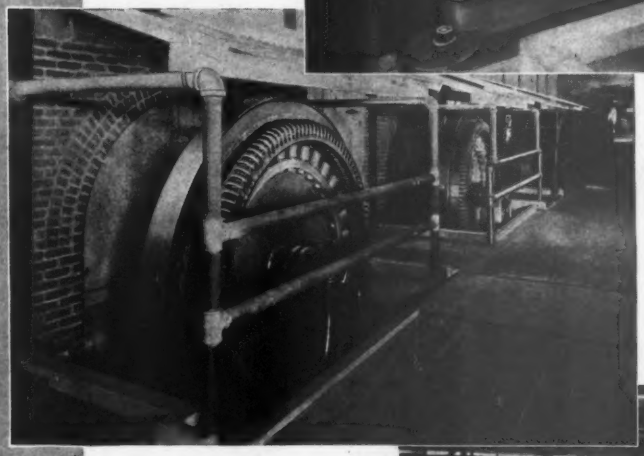
IT WILL PAY YOU TO SEE EVERYTHING ELECTRICAL



Another good investment — the G-E distribution transformer. Its "perfection of detail" in basic materials, design, and manufacture saves you real money.

FOR CHIPPERS, SHREDDERS AND WOOD HOGS, the G-E synchronous motor is highly efficient. It will improve power-factor and handle high peak loads.





FOR YOUR GRINDERS use the highly efficient, power-factor-improving G-E synchronous motor.

Reduce your power bills by improving power-factor. The right G-E capacitor will pay profits by reducing power bills.

FOR YOUR BEATERS you can obtain the right drive from the complete G-E line of synchronous and induction motors and control.

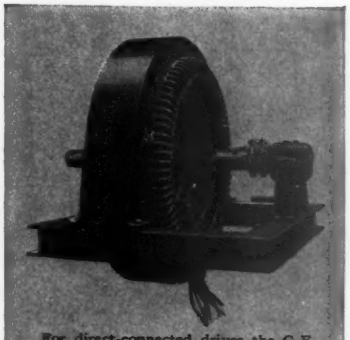
G E N E R A L

GENERAL ELECTRIC FOR

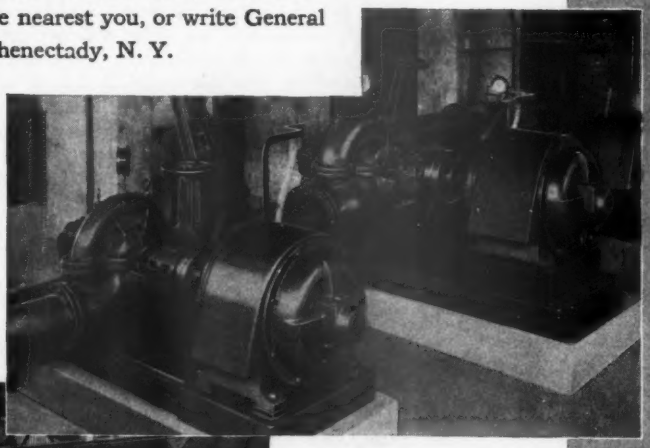
• Wood Room
• Machine Room
• Sulphite Mill

SAVINGS realized from modernizing your electric equipment will pay for additional apparatus. Look over your wood room, your machine room, and your sulphite mill. Are you getting maximum efficiency from your present electric drives, or are your power bills and repair bills increasing because of the obsolescence of your equipment?

G-E synchronous motors, with control matched electrically, and the tough, sturdy induction motor for jobs requiring high starting torque, are designed in sizes to fit your requirements. General Electric can meet your every need with dependable apparatus, progressive engineering, and prompt service. Call the G-E office nearest you, or write General Electric, Dept. 6C-201, Schenectady, N. Y.

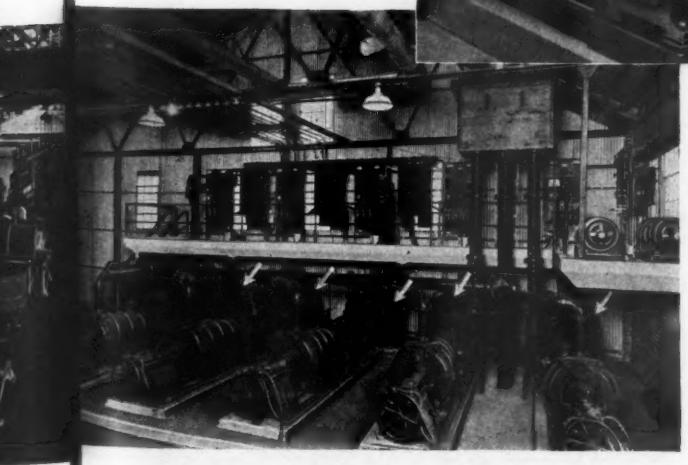


For direct-connected drives the G-E low-speed synchronous motor line provides the right motor for many applications.

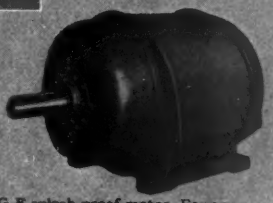


FOR YOUR PUMP DRIVES use G-E motors and control developed through close coöperation between pump manufacturers and our design engineers.

Insist on the right control equipment for your synchronous motors. The G-E line is complete.



FOR YOUR JORDANS you can't beat G-E synchronous motors. They give you better service at reduced power cost.



G-E splash-proof motor. For any auxiliary—pump, fan, conveyor, crane—the right motor can be obtained from the complete G-E line.

020-80

ELECTRIC

CUBAN TREATY AIDS AMERICAN PAPER INDUSTRY

The Cuban Reciprocal Tariff Treaty was signed on Friday, August 24, and provides for a material lowering of Cuba's tariff rates on many grades of paper according to the Import Committee of the Paper Industry.

As this is the first treaty to be signed under the new reciprocal tariff law a review of the procedure taken in behalf of the Paper Industry is important, as it may have to be followed as to treaties with other nations.

When it became known that a reciprocity treaty was being negotiated, S. L. Willson, as President of the American Paper and Pulp Association and Chairman of the Paper Industry Authority under the Recovery Act, filed a statement of the Paper Industry's interest in the Cuban Treaty with the Secretary of State. Later Mr. Willson filed a similar statement with the Government authorities named by the President to take testimony from American industry on the Cuban treaty. An important phase of the work done in regard to this treaty is the fact that it was the first important action to be taken by the newly formed Committee on Legislation of the Paper Industry Authority, of which Norman W. Wilson is Chairman. The Import Committee of the American Paper Industry, because of its knowledge of foreign trade problems, provided the necessary machinery for the carrying out of the Industry's program, as it will continue to do it in the case of any other reciprocal treaties.

The Paper Industry asked that the preferential rate given American paper under the proposed treaty be 50 per cent. A part of what was asked was granted and appears in the Treaty as promulgated. American producers were given better tariff treatment than heretofore on the items in which their chief interest lies.

The Cuban tariff laws provide for fixed rates on all imported commodities. American, however, has always enjoyed preferential treatment, by a precentage reduction on various commodities from the established rates as compared with the basic rates levied on commodities from other countries.

Under the new treaty this preferential is increased in many cases, amounting to a reduction of duty on American products.

As Cuba, in proportion to its population is the largest export market for American paper, the detailed rates under the new Treaty are of interest to the domestic mills. The rates are given in Cuba pesos, the peso being practically of equal value to the dollar, and also in percentage of preferential granted the United States as compared with other nations. In some cases there is a combination of reduction of rates and an increased preferential.

The Cuban government guarantees that there will be no increase in tariff rates during the life of the treaty on all items with the exception of cardboard hoods and discs for milk bottles, upon which preference rates to American producers remains at 30 per cent, the same as before the treaty. Details of the grades in which changes were made advantageous to American producers are listed below:

Merchandise—	Rate to U. S. In Cuban Pesos New	Old	Margin of Preference to U. S. New	Old
PAPER AND CARDBOARD	(per 100 kilos)			
Writing paper, not containing linen	4.80	5.60	40%	30%
Non-specified paper, in continuous rolls	4.80	5.60	40%	30%
Toilet Tissue, paper towels, handkerchiefs and napkins of paper	4.80	8.40	40%	30%
Coated paper, having one or both sides covered with a coat of white lead or barium sulphate, kaolin, talc, etc., chrome paper commonly used for printing or lithography	2.40	2.80	40%	30%
Ordinary paperboard or pasteboard, manufactured on a base wholly of waste paper or newspaper known as "chipboard" and "Newsboard"	1.625	2.10	35%	30%
The same, colored on one or both sides, or covered with white or colored paper	1.80	2.10	40%	30%
Fine and heavy kraft board, manufactured principally from sulphate pulp and Manila board or imitations of Manila board, coated or lined with white or colored paper	1.80	2.10	40%	30%
Paperboard, coated with white lead, kaolin, or other similar substances, whether or not covered with white, colored, lustrous or fancy paper	1.95	2.10	35%	30%
Bristol-board and fine cardboard manufactured solely of sulphite pulp or flax paper or rags, colored or not, coated or not, or covered or not with white, colored, painted, lustrous or fancy paper	3.30	4.20	40%	30%
Exterior cases in which articles are imported, made of any kind of cardboard, including burlapboard boxes, water-proofed or not	1.65	From 6.30 to 14.00	45%	30%
NOTE—Ordinary packing cases whose contents are subject to ad valorem duties shall not be dutiable separately.				
Filter paper, in folios or cut in any form	3.60	4.20	40%	30%

RAINIER'S SECOND WELL SUCCESSFUL

The second artesian well being driven for the Rainier Pulp & Paper Company, Shelton, Wash., on the fill adjoining Goldsborough creek is completed, so far as its depth of 330 feet of 26-inch bore is concerned, the work stopping at that depth because of difficulty in forcing down the steel casings. However, the casing is being perforated at several points where water veins were located in the course of drilling, and if the flow does not appear satisfactory it is probable that a somewhat smaller bore will be made to greater depths, or to the 600-foot mark where a heavy flow was found in the first 8-inch well driven at the central power plant, where a normal flow of around a million gallons a day is reported.

A heavy duty motor and pump is being installed at the new well, with transformers to handle the power from the mill, and this is expected to develop a flow of five million gallons of water for the pulp mill, which requires around fourteen million gallons of water. The water is excellent in quality and free from mineral properties which interfere with high-grade pulp making. The plan is to develop one or two more wells in the hope of meeting the all-year demands of the pulp mill for clear and steady water supply.

SIX MONTHS FOREIGN TRADE

The Commerce Report of the Bureau of Foreign and Domestic Commerce for August 18th comments on our foreign trade in part as follows:

United States foreign trade in the first six months of 1934 was much larger, in terms of both quantity and dollar value, than during that grossly abnormal period from January to June, 1933. Both exports to and imports from practically every country increased, in a number of instances considerably over 100 per cent, and the values of a large list of commodities scored wide advances. Gains in exports as compared with the first half of 1933 were particularly striking in the case of manufactures and semimanufactures, while for imports greatest advances were in crude materials. But because of the rapid rise of both export and import prices and the unusual conditions prevailing in the first half of 1933, value comparisons with that period are somewhat lacking in significance.

Distribution of Trade by Countries Shifts

Statistics of the distribution of trade by countries reveal that a number of significant changes have occurred since 1929. In that year exports to Europe accounted for 42.7 per cent of the total value of shipments and those to Asia for 12.4 per cent, while exports to northern North America and South America accounted for 19.4 per cent and 11 per cent, respectively. The relative importance of Asia as an export market has grown steadily since then and in the first six months of 1934 it took 18 per cent of all exports.

Europe, our most important single group of markets, took 49.5 per cent of all exports in the first six months of 1933 and 46.2 per cent in the corresponding months of 1934. Exports to northern North America and South America were, on the other hand, a smaller proportion of total shipments in the first half of 1934 than in the same period of 1929; the percentages were 14.7 and 7.1, respectively.

Although China and the Philippines have become relatively more important as markets for United States products, the increased purchases of Japan account for the larger part of the growth in Asia's standing as an export market. Exports to Japan in the first six months of 1934 were valued at $90,624,000 compared with $50,493,000 in the same period of 1933 and $126,597,000 in the first half of 1929. Partly as a result, our merchandise trade balance with Japan has shifted from an unfavorable balance of $75,136,000 in the first half of 1929 to a favorable balance of $30,938,000 in the first six months of this year.

Exports to Canada since 1931 appear to have been affected to a considerable extent by the status of Canadian and United States dollar exchange. From the first half of 1931 to the first half of 1933 exports to Canada declined 63 per cent, compared with a decline of 49 per cent in the value of all exports. Between the two periods the Canadian dollar had fallen to a considerable discount in terms of the United States dollar.

Following the recovery in the exchange value of the Canadian dollar, exports from the United States to Canada expanded. In the first half of 1934 as compared with the first half of 1933, exports to Canada were 75 per cent larger while the value of exports to all countries was 55 per cent larger.

Among the countries to which exports have shown a much greater than average recovery since the greatly depressed first half of 1933 are Russia, British India, British South Africa, China, Japan, Egypt, Finland, Denmark, Norway, Sweden, Peru, Chile and Venezuela. Shipments to Cuba have likewise shown a marked expansion.

The value of imports from a number of leading trading nations increased more than 100 per cent in value between the first halves of 1933 and 1934. Included in these countries were Argentina, Chile, Ecuador, Australia, Egypt, Spain, British Indian and British Malaya. Imports from Canada, our most important supplier, increased 50 per cent in the first half of 1934 compared with the first half of 1933. Between these same periods the value of goods received from the Philippines advanced 33 per cent and imports from the United Kingdom 55 per cent.

PAPER MAKERS PICNIC

Members and their families of the pulp and paper making unions of Oregon City and West Linn, Oregon, held a picnic Labor Day. A ball game was played between teams from the Crown-Willamette mill and the Hawley Pulp & Paper Company's plant. A dance was held in the evening.

IMPORT COMMITTEE ACTIVE

The United States Customs Court has returned several recent decisions adverse to importers of paper, in which the Import Committee of the American Paper Industry had been interested in behalf of the domestic producers.

The Court held that seventeen importations of bowl paper had been undervalued, overruling protests by the importers against the finding of undervaluation by appraising officers. The court held that poster paper imported from Canada had been undervalued in two cases, one at Duluth and one at Seattle. In the Seattle case the court, while holding the paper dutiable on a higher value than invoiced, remitted the additional penal duties imposed for undervaluation on the showing by the importers that such undervaluation was due to clerical error, and not an effort to defraud the government.

Customs officials at various ports are taking vigorous action as to importations of newsprint paper. Shipments to publications of the Shopping News type have been admitted only under bond to protect the government in case dumping is found, and some of these publications importing colored papers were required to pay duty on papers in poster grades. Efforts of importers to secure admission of paper at remarkably low prices by claims that the paper is side runs or damaged have been met by imposition of duty or leavying of a bond under the Anti-Dumping Act. Some importers have sold paper in 28 inch width rolls as side runs.

WIRE MAKERS ADOPT CODE

On July 30th a Supplementary Code of Fair Competition for the Pulp and Paper Mill Wire Cloth Manufacturing Industry, a division of the Fabricated Metal Products Manufacturing and Metal Finishing and Metal Coating Industry, was approved by NRA Administrator General Hugh S. Johnson.

The code establishes a code authority of seven members, provides for an uniform accounting system and methods of cost finding; provides against selling below cost; provides for methods of setting up and revising price lists; and sets forth the unfair trade practices which are prohibited by the supplementary code.

Complete control of the Westinghouse Winder Drive is centralized at one panel as is shown by this installation of a 3000-f.p.m., 228-inch, two-drum winder.

A WINDER DRIVE

that will give you better rolls at lower cost!

OUT of every dollar you now spend on power for old-fashioned winder drives, frequently more than half goes to heat up the brake bands and drums of the unwinding stands. This power waste can be eliminated and power costs reduced accordingly, with the Westinghouse electric Winder Drive.

WHAT THIS WINDER DRIVE MEANS TO PAPER MAKERS

Paper rolls of uniform density throughout
Elimination of soft spots, wrinkles and creases
Greatly reduced power cost
Lower maintenance
Less floor space

This winder drive, many installations of which have been in operation for several years, has an electric braking generator that returns energy, formerly wasted, to the winder motor. Furthermore, it provides automatic control of sheet tension, assures fewer paper breaks and results in a better, more uniformly wound roll.

For New and Old Winders

The Westinghouse winder drive, with individual motors on each drive shaft and a braking generator on the unwinding stand, is adaptable to both new and existing two- and four-drum winders. Full control of sheet tension and speed is centralized at one point.

Let us send you additional information. Call the nearest Westinghouse office, or simply address Westinghouse Electric & Manufacturing Company, Room 2-N, East Pittsburgh, Pennsylvania. T 79855

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of those who sell paper in the western states

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COCHRAN TRAVELS

A. H. Cochran, San Francisco, paper mill representative, spent five weeks in the Pacific Northwest in July and August calling on the trade.

Mr. Cochran is coast agent for Dill & Collins and the Wheelwright Paper Co., both subsidiaries of the Mead Corporation. The Mead company only recently took over the George W. Wheelwright Paper Co. and changed the name to the Wheelwright Paper Co., with Wheelwright Papers, Inc., as a sales outlet. Howard Tunstall, formerly with Dill & Collins, is now sales manager of the Wheelwright Co. George W. Wheelwright, whose family was identified with the Wheelwright company for many years, is an officer of the new firm and will actively direct the business.

Mr. Cochran expects William R. Maull, general manager of production of the Mead Corporation, to attend the Tappi convention.

MAXWELL SUFFERS ACCIDENT

D. L. Maxwell, San Francisco, Pacific Coast representative for The Tissue Co., was confined to his Palo Alto home in August by an accident. During his absence from his office, Mr. Maxwell's son, R. D. Maxwell, came down from Camas to handle his father's work. The younger Maxwell is working regularly with Mr. J. Gigler, the new superintendent of The Tissue Company's Camas plant.

KICK-OFF

Once again King Football comes into his own on the Pacific Coast! Appearance of this popular sovereign was hailed by the printing of 15,000 Pacific Coast football schedules by Blake, Moffitt & Towne, Pacific Coast paper jobbers. These schedules were arranged and printed in a unique and compact manner under the direction of Reeves Watson of Blake, Moffitt & Towne's advertising department at San Francisco.

STRATHMORE REPRESENTATIVE ON EASTERN TRIP

T. C. Macormack, Pacific Coast representative of the Strathmore Paper Company, is now on a six weeks' trip through the Eastern states. While there he will visit the Strathmore mills at West Springfield, Woronoco, and Housatonic, Mass.

CODE IS WORKING

"The administration of the code is proceeding in an orderly manner and with the whole hearted cooperation of all concerned," says L. M. Whitely, secretary for the Portland Area of the Paper Distributing Trade Code Authority.

BROWN EXECUTIVE COMES WEST

Jamie Stepp, director of sales of the Brown Co., Maine and New Hampshire pulp and paper manufacturers, is due on the coast this month to hold a series of conferences with the firm's western distributors. Earl Van Pool, San Francisco, Pacific Coast representative of the company, will meet Mr. Stepp in Los Angeles Sept. 8 and, after a week there, will accompany him up the coast to Seattle. Originally they had hoped to reach Portland for the Tappi convention but later found this impossible.

MILLAR GOES EAST

Jack Millar, formerly manager of the California Cotton Mills in Oakland, is now in Detroit in charge of National Automotive Fibres, Inc. Mr. Millar is known to the paper trade circles of the Pacific Coast and he is an honorary member of the millmen's golf committee which stages the annual tournament of the Pacific States Paper Trade Association at Del Monte. Augustus Johnson, San Francisco paper mill representative, who recently visited Millar in Detroit, reports that Jack is catching bigger and better fish than ever before.

ARTHUR DUNN IS ILL

Arthur Dunn, attorney and secretary of the Pacific States Paper Trade Association is seriously ill at his home in San Francisco.

Mr. Dunn's many friends up and down the Coast are pulling for him to regain his health rapidly.

PELL GOING TO PHILIPPINES

Once again Rodman C. Pell, Jr., head of the Pelican Paper Co., San Francisco jobbing house, is starting out, with his camera, to far places to take movies of strange people. This time he heads westward on the "President Garfield"' October 26, for the Philippines to film scenes in the little known islands of Cebu, Iicila, Zamboanga, Palawan and others of the southern part of the archipelago.

For some years Mr. Pell has been entertaining San Francisco fraternities, luncheon clubs and other groups with his "Peligrams of the South Seas," "Peligrams of Panaam" and "Peligrams of San Francisco", This new picture will be known as the "Peligrams of the Lesser Known Philippines". Up to now all of Mr. Pell's shows have been free, but in the future he is going to charge admission.'

Mr. Pell takes and shows these pictures for the advertising results the effort brings his paper house and he says it has brought splendid results in the contacts he has made.

Mrs. Pell is accompanying her husband on the Philippine trip. J. A. Watson, sales manager of the company, will run the business while the boss is gone.

HECHT MAKES TRIP

Victor Hecht, San Francisco, vice-president of the Zellerbach Paper Co. in charge of sales promotion, was in the east in August on an extended trip. While away he planned to visit the annual meetings of the Hammermill Paper Co. and the S. D. Warren Paper Co.

SILVERSTREAK SILENT CHAIN ANNOUNCED BY LINK-BELT

In keeping with today's trend toward greater thought to the aesthetic in designing even the commonest machinery part, Link-Belt Company, Indianapolis, announces that it has given a "new dress" to a 32-year old product, the Link-Belt Silent Chain Drive, by bluing most of the chain, and treating the washers and guide bars to give them a silvered appearance. The bluing of the bulk of the chain has the effect of placing the silvery parts on a dark blue background, thereby emphasizing the silvery parts.

The tradename Silverstreak has been adopted as a fitting designation, since when the drive is in operation the motion of the chain describes a silvery streak. Thus, the modernized chain has a distinctive appearance irrespective of whether it is in motion or lying in stock awaiting installation. It is made in all standard types, for both industrial first reduction drives and automotive silent timing, viz., side flanged, middle guide, no back bend, and duplex types.

No claims for improved efficiency, strength or durability are made, as it is said that silent chain is inherently positive in action, and that many of the company 's silent chain drives have been in service upwards of 25 years. Link-Belt introduced silent chain in the year 1902, but the joint then was not equipped with renewable segmental bushings.

Silverstreak silent chain follows fairly closely on the heels of the announcement of Link-Belt Silverlink roller chain.

DENNISON'S 34 YEARS WITH BLAKE, MOFFITT & TOWNE

For thirty-four years now, come Sept. 1, T. M. "Ted" Dennison has been working for Blake, Moffitt & Towne in Los Angeles, and Arthur Towne wrote him from the San Francisco office recently asking for a few highlights and impressions of his paper trade experience during this third of a century. Mr. Dennison is manager of the printing paper department of Blake, Moffitt & Towne in Los Angeles and is known to the paper trade and paper mill fraternity the length of the coast.

"On Sept. 1, 1900, at 7 a. m. I reported for my first work with BM&T in our old location at 146-148 North Los Angeles St.," Mr. Dennison wrote. "Ernest H. Greppin was at that time the manager and he had for a long time promised me a job if I decided to leave the T. Daniel Frawley Stock Company, with whom I had been associated for the previous two years. Because of this theatrical troup leaving in October for a year's tour of the Orient, I decided I would quit trying to be an actor and endeavor to learn something about the paper business.

"My first job was sort of a roustabout office boy, delivering bills, sweeping out and even driving some of our teams to make rush deliveries—in fact, at different times I have held practically every job in the house except that of general manager. Used to relieve our regular cutters, both on the hand and power machines, got our stock and relieved the outside salesmen, both city and country, when they were on vacation; was traffic manager — at least routed all the freight for several years and when we first divided our business into departments—printing and wrapping—for about four years I was nominally in charge of the wrapping paper department.

"I worked under E. G. Greppin and his brother, Phil, until Phil's death in 1915. At that time the business was more clearly divided into printing and wrapping departments and from then on I was in charge of the printing paper end. Ernest Greppin died in 1922.

"At the present time the only executive who was in the paper business when I started and who is still active is J. Y. Baruh, for many years the Zellerbach manager and now in charge of Crown - Zellerbach's Southern California interests. I don't know of any others, aside from four men in our company, who were here when I started. Two employees, John Bairsky, running one of the elevators and Joe Moffatt, in charge at Long Beach, have been with us since 1900 continuously. Geo. Van Vlack was billing clerk at the time I started and while he is still with us, he did severe his connection once for several years. At first all of our bills were written by hand and one of my first jobs was to relieve Van Vlack on his lunch hour and vacations. We worked in those days from seven to six. Saturday was an event for we closed at five o'clock. I remember when Saturday afternoon closing was first discussed by the paper group here. Both "E. H." and Phil were away and I represented the house at the meeting, at which we agreed to close one summer at one o'clock on Saturdays during July and August. I almost lost my job when the Greppins heard of it. They both said it couldn't be done but after trying it out one summer we continued the practice and later decided on Saturday afternoon closing throughout the year.

T. M. "TED" DENNISON

"For years there were only two paper houses here—Zellerbach and ourselves. When Butler Paper Co. decided to open the Sierra Paper Co. here, about 1912 or 1913, we thought competition was becoming too keen and wondered how we could possibly continue to exist.

"In the early days there was no color charge, whites and colors of all papers and boards were sold at the same price. Our cutting department was run as an accommodation to customers and while we occasionally charged for a complicated job, most cutting was done for nothing. When the paper houses decided to make a charge for cutting, the printers felt that we were taking advantage of them—in fact calling us some very harsh names. Later, when a 10 per cent charge was made for broken packages, there were again loud laments from our printer customers as to our being unfair. This was repeated again in the early days of the World War when there was an extra charge put on colored papers. As you know, these laments have continued until this day with every new innovation adopted by the paper merchants."

EASTERN REARRANGES PRODUCTION

Eastern Manufacturing Company has announced that it is planning a re-arrangement and consolidation of its facilities, affecting principally the operation of its Orono Division.

The principal Orono lines, including Orono watermarked and embossed papers, Arbro Stripe, Marko Butchers' paper, Arctic Manifold and certain other grades will be made at the other eastern mills and the operation of the mill at Orono will be discontinued. Additional equipment is being installed at the other mills to take care of the Orono tonnage and to permit more economical and efficient operation.

Neither the manufacturing schedule nor service to customers will be interrupted or in any way affected by the change, except that Orono Division shipments will be made from their other mills instead of from Orono. Sales will continue to be handled, as heretofore, by the General Sales Office, 500 Fifth Avenue, New York City, and Western Office, 1223 Conway Building, Chicago, Ill.

PAPER MANUFACTURER RECEIVES HONORARY DEGREE

Horace A. Moses, president of the Strathmore Paper Company, West Springfield, Mass., was the recipient of an honorary degree of doctor of laws from the Massachusetts State College at their annual commencement exercises, according to word received by T. C. Macormack, Pacific Coast representative of the Strathmore Paper Company.

British Columbia News

J. F. Patton, sales manager of St. Lawrence Paper Mills, one of the larger eastern Canadian pulp and paper enterprises, has been visiting the Pacific coast, inspecting British Columbia mills with R. Denau, of George F. Steele & Company, sales agents for Powell River Company in New York.

J. Falconer, resident manager of Powell River Company, is expected back from an extended holiday tour in the British Isles this month.

Political and industrial circles in Canada were taken by surprise when Hon. H. H. Stevens, federal minister of trade and commerce, whose home is in Vancouver, B. C., delivered an attack on the financing policies of investment houses and other groups in connection with the Canadian pulp and paper industries.

Addressing a parliamentary study club, Mr. Stevens said that his committee on price spreads and mass buying had been asked to investigate the paper industry. He claimed that $30,000,000 had been "gouged out" of the industry as a result of mergers which had pyramided debts of the various merging companies while the promoters and others took the cash.

"They took a healthy, prosperous and wealthy community, made up of the different groups of the pulp and paper industry, which, if they had been left alone, would have gone through this depression without any difficulty," said Mr. Stevens.

"They took them and brought them into mergers, not for the purpose of making institutions that would be more free of debt, not for the purpose of putting more capital into them which would produce earnings; but bond issues were made through the name and influence of personal leaders in finance, which issues the promoters induced the public to buy.

"And with what results? I am satisfied that in the various mergers now operating and which have come into existence between 1922 and 1929 there was made out of that industrial manipulation $30,000,000 (my calculations were $34,000,000), taken out of that industry and put down into the pockets of those who promoted the mergers. The industry has been left with an added burden of debt as a result of this added financial exploitation."

INJURED DEMONSTRATING ACCIDENT

It has been said tha the best way to forestall an accident is to "expect the unexpected."

This was demonstrated recently at a large Eastern paper mill. Charles Williams, a paper machine hand, had sustained a compound fracture of the right leg near the ankle, while attempting to kick a belt in place on a pulley. His leg was caught between the belt and the pulley.

This mill is keen on safety and makes a good job of it among its 1,160 employees. So after the accident, a tour foreman, called the machine crew together for a practical safety lesson growing out of the accident to Williams. In demonstrating how the latter had been injured, the equipment suddenly started up and the foreman's foot was caught, breaking the lower end of tibia in his right leg.

It is unusual that one out of three lost-time accidents in a three weeks' period was due to safety instruction, but it very graphically emphasizes the need for eternal vigilance even while driving home a lesson in safety.

PRECISE MEASUREMENT OF AIR PERMEABILITY OF PAPER MADE POSSIBLE

A sensitive instrument has been developed by F. T. Carson at the National Bureau of Standards for measuring the rate at which air passes through paper and other porous materials in sheet form. The air permeability of paper is significant in a great many ways. Sheathing paper used in the walls of houses should be air-tight to minimize heat losses from air infiltration. Many food products require air-tight wrappers; others require greaseproof wrappers, and there is a close relation between the permeability of air and the permeability of oils. A well closed structure, not too permeable to air, is desired in cigarette paper to insure good draft through the burning tobacco. The dielectric strength of paper used in insulating electric cables is closely related to the air permeability.

Certain types of bag paper requires a fairly definite air permeability, since the process of filling the bags demands that the paper act as a filter to retain powdered material as the air escapes through the paper. The air permeability test is sometimes used to predict the rate of absorption of the saturant in the preparation of such materials as roofing felt, paraffined paper, sheathing paper, bakelite, and cable paper, since both properties depend upon the porosity of the untreated sheet. For the same reason air permeability is related to the rate of drying of printing ink on printing papers.

A preliminary survey indicated that the most common sources of error in existing instruments for testing the air permeability of paper are leakage, especially at the edges of the specimen, fluctuations in driving pressure, lack of sensitivity, and restricted range. The new instrument contains a permeability cell of novel design, in which an annular cell surrounds the inner testing cell. The air flow is so regulated that there is no lateral pressure gradient at the boundary of the inner cell, and hence no leakage into or out of it. The pressure regulator is a form of automatic diaphragm valve designed to maintain a very steady pressure drop across the instrument. The amount of air, which in a given time reaches the inner cell by flowing through the specimen under the influence of this constant pressure difference, is measured with a capillary flow meter containing four carefully calibrated capillary tubes. Results are reproducible on an identical area to within a few tenths of one per cent.

The range of the instrument is about a thousand times that of most other instruments available for the purpose. It will accommodate materials of any thickness up to half an inch, and it is not necessary to cut them in order to make the test. Tests can be made rapidly, since the element of time is taken care of in the calibration and the duration of the test need not be measured. The test area is larger than is usually found in air permeability instruments in order better to sample the material. The instrument is well adapted to the testing of leather and some other sheet materials.

The instrument is described in the Bureau Research Paper No. 681, copies of which can be obtained from the Superintendent of Documents, Washington, D. C., for 5 cents (cash).

Bright paint aids the safety record. One manufacturer painted machines and equipment in gay, bright colors, and—where moving machinery was concerned—in contrasting colors. All the hues of the rainbow were used.

The effect was beneficial on all scores. Employees took pride in voluntarily keeping clean the machines.